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ACORN USER
The magazine for all users of 32-bit Risc OS computers
Acorn World Show Special
132 page special
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The ACORN USER DISC
NOVEMBER 1994
Screen saver from Iota: plays Animator files
Report Writer demo
Crossword font
Desktop enhancements
VIRUS CHECKED
Animator reviewed
CD-Rom round-up
Creating 3D worlds with Architech
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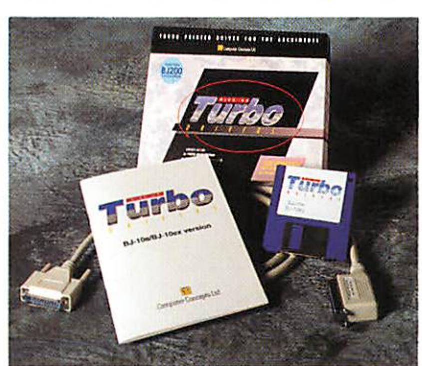
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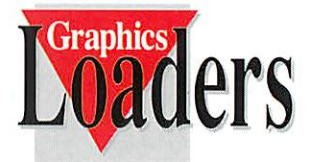
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the Acorn RISC computers

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SCANLIGHT 256 REVIEW:

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ACORN USER

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BJC-600 REVIEW:

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ARCHIMEDES WORLD

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Editor's letter

It seems only a few weeks ago that we were witnessing the launch of the Risc PC at the *Acorn User* show in Harrogate, and yet it's show time again.

According to Acorn's press release, there'll be a lot of exciting new products around, though having waited this long for the PC Card, I'll wait until I've actually seen one before believeing it. If you want to know what will be happening in the Acorn scene this Christmas, don't miss our eight-page Show Special; if the show lives up to expectations, it should be well worth a visit.

Finally, an apology that the second part of *HomeWorks* has been postponed until next month. There's nothing we can do about illness striking the programmers, but believe me, it'll be worth the wait...

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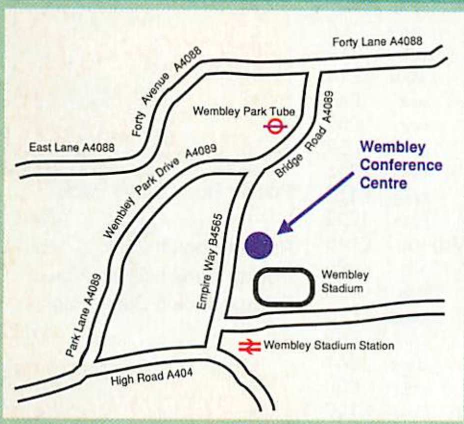
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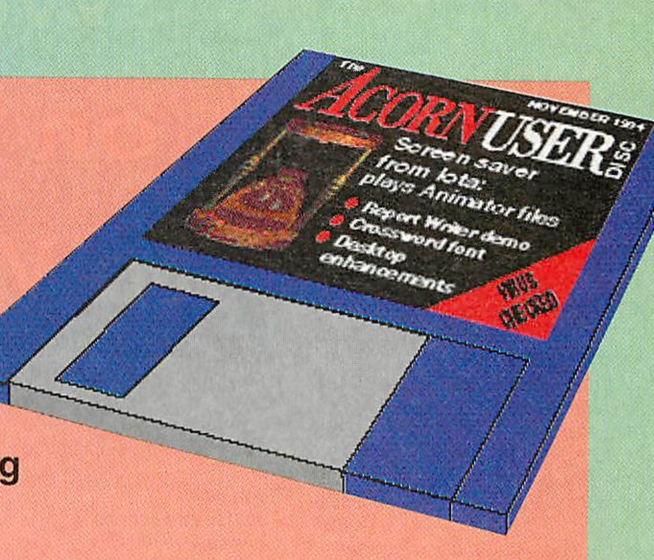


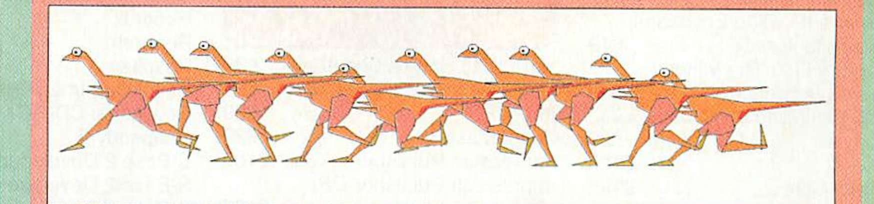
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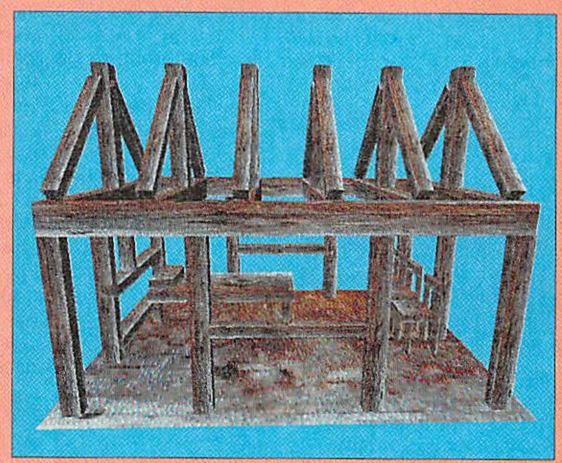
FEATURES















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ideA 330 Mb (OS 3 only)	ICSO	£259
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why...

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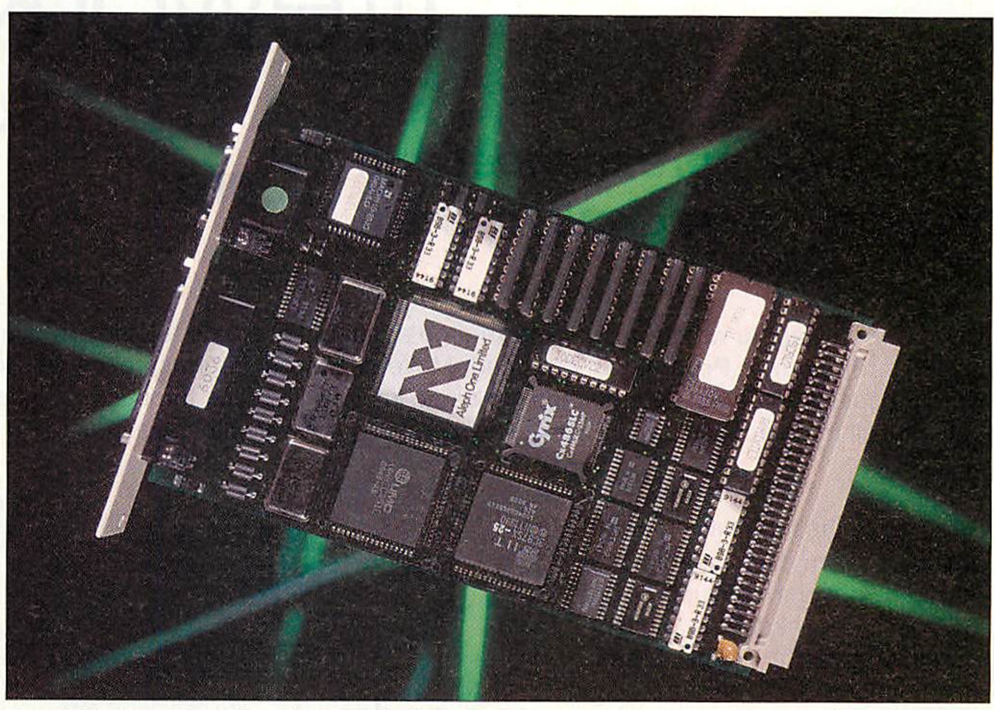
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Risc PC 486 co-processor at show

AS *ACORN USER* went to press a scant six weeks before the Acorn industry's annual jamboree, Acorn World, the crucial Risc PC 486 card ASIC (application specific integrated circuit) chip had not yet been delivered by chip designers Future Technology Devices International in Scotland.

Undeterred, Acorn has told *Acorn User* that it is confident the chip will be delivered in time and, just as importantly, it will work. Acorn's aim is to demonstrate working 486 cards at Acorn World and even preview the high performance 486DX4 variant which will be marketed by Aleph One, who originally designed the co-processors for Acorn.



The existing face of PC Cards on the Acorn platform

An Acorn spokesman told *Acorn User* that the company was confident that Future Technologies would deliver, as its record with similar chip projects for other customers was good. However, if the first turn of the 486 card ASIC fails to work, there will be precious little time to issue a revised version before Acorn World.

Meanwhile, Aleph One is saying little, beyond the fact that it has not yet settled on a 486 variant of choice for its 'own-brand' version of the co-processor card. Chips under consideration include 486DX, DX2 and DX4 types from a range of manufacturers.

'We intend to offer users of Acorn's fastest computers the most powerful PC processing options,' said Aleph One technical boss Alex van Someren, who added: 'While Acorn's version of the card offers a low cost entry level, the Aleph One variants will provide greater performance at highly competitive prices.'

Other goodies Acorn will be showing to wow even the most hardened techie at the show include a seven-slice Risc PC crammed with expansion cards, plus a five-processor multiple Arm card.

Look out also for native Risc PC Unix, the TAOS multi-processor operating system and OS/2 on the PC card. Connection to Novell fileservers will be demonstrated too and there is the prospect of an early version of a Internet World Wide Web client application being demonstrated. For more details, see the Acorn World preview section.

ANT networking different developments

ANT Limited, the Acorn networking specialist company set up by Aleph One and Atomwide in 1993, will be showing important new networking software packages at Acorn World.

OmniClient is a client application to enable Acorn Risc computers to connect directly with a wide range of alternative networking platforms like Microsoft Windows for WorkGroups, Lan Manger and Windows NT.

It's an inescapable fact that Acorn computers often sit side by side with PCs these days and interconnection is a convenience many users have really been looking forward to, butuntil now Acorns have been hard to interconnect with PC's.

Also to be previewed at the show will be *Marcel*, an electronic mail package for networks gatewayed into the Internet.

Marcel is MIME (Multipurpose Internet Mail Extensions) compliant, which is an emerging standard for packaging and mailing binary files and compound documents via the Internet.

Acorn Access, which ANT developed for Acorn, will also be demonstrated on the stand.

ANT can be contacted on: (0223) 567808, Fax: (0223) 567801 or e-mail: info@ ant.co.uk.

SJ's ATM secret

EVERYONE'S talking about ATM, or asynchronous transfer mode networking. Acorn's spin-off Online Media uses ATM to demonstrate its interactive multimedia technology and Olivetti has invested in advanced research and development into ATM technology and recently helped form Cambridge-based ATM Ltd.

ATM is regarded as the up and coming replacement to existing networking technologies like Ethernet but there's not that much in the way of commercial products.

However, there is one major exception in the form of SJ Research's Nexus networking system. 'We have never made much of the fact that Nexus is based on ATM technology,' said sales and marketing manager Colin Abrey.

In fact SJ Research has been developing ATM technology for four years and has had the Nexus system on the market for 18 months. 6000 Acorn computers are Nexus-equipped on the desktop when ATM to the desktop on other platforms is still largely vapourware.

Kim Spence-Jones, SJ's technical managing director commented: 'We believe we have the largest installed base of ATM networks in the UK and probably Europe. ATM technology is being used as the backbone of the information superhighway. It is also the only network which supports the requirements of multimedia at an affordable price.'

SJ Research is on (0223) 416715 or Fax (0223) 416440.



Anglia television releases

THIS month, Anglia Television has announced two important multimedia developments.

Firstly Anglia will produce multi-standard CD-Rom disc publications which can run on either an MPC-compatible IBM PC, Apple Macintosh or an Acorn system.

Secondly, Anglia has announced it is to produce MPEG-1 movies on CD-Rom which will be compatible with Acorn Risc computers, whether or not MPEG hardware is fitted or not (see page 16).

If there is no hardware decompressor, software decompression comes into play – a function of an enhanced version of Replay.

Commenting on the multi-standard CD-Rom system his company has developed, Anglia's Media Development Executive, Peter Stibbons, said: 'We see this as an extremely important development. There is great pressure for us to supply MPC and Macintosh markets, but because we will be developing the material on Acorns under Risc OS, owners of Acorns can be sure of being able to work with our products.

'We will be able to maintain all the benefits of common standards that Acorn users are used to and the returns from the larger markets will enable us to maintain our Risc OS product line.'

On MPEG video, Anglia sees this as a major development for education and has been closely involved with Computer Concepts, Wild Vision and Acorn in the development of Acorn's MPEG products and strategy.

Stibbons commented: 'The inclusion of MPEG has been undertaken in such a way that all users of Acorn machines will feel they are receiving top value for whatever level of machine they are using.'

Anglia TV can be contacted on (0603) 615151, Fax: (0603) 622191.

Not enough to go round



'Still a long way to go', especially in primary education.

A SURVEY commissioned by Acorn has revealed that the educational computer market is far from saturated. The research, carried out by RS&M – who polled 610 IT co-ordinators nationwide – estimates that on average 18 children have to share one computer in their school.

Acorn's education supremo, Peter Talbot, commented: 'Although British education has really led the uptake of technology in schools, this research suggests there is still a long way to go.' The survey also revealed that 93 per cent of secondary schools and 54 per cent of independent schools now use CD-Rom drives. Primary schools, Acorn's main market, lag behind with a CD-Rom multimedia penetration of just 18 per cent, though this figure is expected to rise rapidly in the wake of the Department of Education's recent £4.5 million CD-Roms in Primary Initiative Scheme.

Pocket Book compatible

'YOU are standing at the end of a road before a small brick building. Around you is a forest...' That is the beginning of the opening scene description from one of the best known computer adventure games of all time, none other than *Adventure* itself, originally produced by Don Woods and Willie Crowther in 1977.

Adventure and a selection of more advanced classic Infocom adventures like *The Hitchhiker's Guide to the Galaxy*, *Zork* and *Leather Goddesses of Phobos*, among others, can now be played on the Psion Series 3 and Pocket Book models I and II. Users are able to transfer these text-based adventures to Series 3 and Pocket Book machines via a PC serial link from original Infocom PC floppy discs.

The adventure interpreter software, called *Infozip*, which handles the Psion/Pocket Book end of things, is supplied by Interdata Developments based in Salford.

Special data compression enables the games to fit inside the relatively limited memory of a Pocket Book or Series 3. Most of the Infocom collection will run, though some require the higher resolution screen of the later Series 3a or Pocket Book II.

InfoZip costs £24.95 inc VAT supplied with *Adventure* and *Curses*. Additional games in the form of *Lost Treasures I* and *II* as well as *Adventure Pack I* are available, starting from £24.95. *InfoZip* will be reviewed in the next issue of *Acorn User*.

For more information, contact Interdata Developments at Tel: 061-792 2871, Fax: 061-792 2114 or via e-mail: lace@cix.compulink.co.uk.

15th anniversary for Maudens

The computer dealer Mauden Computer Sales in Stourbridge is celebrating its fifteenth anniversary. Founded in 1979, the company quickly established itself as an authorised education supplier, and in this capacity it has been selling Acorns for the last ten years. In 1992 the company expanded, moving to better premises and expanding its existing training courses for customers; all of its technicians are fully Acorn trained.

To celebrate its 15th year of trading, Maudens is offering a number of special offers to customers, and has launched its own range of Champagne Personal Computers. Maudens is on (0384) 833300, fax (0384) 833111.

Northern Ireland order

Acorn has won a £107,000 order to supply 78 Risc PCs and peripherals to the Western Education and Library Board's Technology Education Centre in Omagh, Northern Ireland.

The Centre provides support and training on all aspects of IT in the curriculum to schools and colleges within five council districts and is now kitted out exclusively with Risc PCs. The Centre's IT advisor, John Murray, said the Risc PC was the ideal computer for his needs.

AppleFS from Oregan

Acorn users who need to access the contents of Apple Macintosh discs now have a choice of solutions. Oregan Developments has released *AppleFS*, following in the footsteps of Computer Concepts' *MacFS* utility. *AppleFS* is compatible with standard floppy disc drives and supports low and high density formats. The price is £59.95. Tel: 021-353 6044.

Pocket Book II update

In last month's review, we sold the Pocket Book II short somewhat by saying that the dictionary/thesaurus and *Plotter* application were provided on SSDs. Actually, they are in Rom, making the Pocket Book II an even more attractive option for those looking for a palmtop.



ASA upholds Acorn complaint

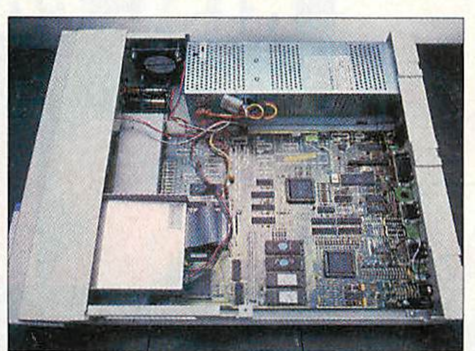
THE Advertising Standards Authority has backed Acorn's complaint against Apple Computer's launch marketing campaign for the new Power Macintosh earlier this year.

In this month's ASA report the advertising watchdog upheld a complaint made against Apple by Acorn and several members of the public.

In Apple literature and advertising they stated: 'Until now, personal computers have used the Cisc (Complex instruction Set Computing) microprocessor architecture, while Risc-based microprocessors have been used for high performance systems such as workstations and servers.

'Apple is the first company to ship personal computers with Risc-based microprocessors.'

This rather conveniently overlooked Acorn's contribution of several hundred thousand Risc-based Archimedes personal computers since 1987.



Risc technology has been inside personal computers for longer than Apple let on...

Acorn's sales and marketing director, Mike O'Riordan, com-mented: 'Although Apple agreed to review the claims when we initially made a complaint in March 1994, this decision reinforces our objec-tion and Acorn's belief that the PowerPC information was misleading. The material was inaccurate and the decision will ensure that UK purchasers are aware that Acorn's position on this matter was correct.'

Apple has since amended all of its marketing material accordingly.

Informatrix high-res Concept Keyboard

THE Concept Keyboard Company has released its latest model, the Informatrix high resolution version of the popular Universal 2010 overlay keyboard. The A3 board has 4096 programmable keys, enabling children to produce graphics, text, numbers and sounds according to the application being run. A stylus is supplied for the board.

The Concept Keyboard Co. says the new board is especially useful for higher resolution applications with irregular details like map work. Customised overlays can be created using an overlay designer software application called *Informax*.

The board plugs into the serial port and is priced £169 + VAT. The Concept Keyboard Co. can be contacted on: (0962) 843322 or Fax: (0962) 841657.

High res software

A LOT of schools software for the Acorn is written with standard resolution TV-monitor displays in mind. Now the trend is towards higher resolution displays offered by more up-to-date multiscan and SVGA monitors.

4Mation has reacted to this trend by updating its primary school software titles like *Betsi*, *A Mouse in Holland* and *Explore with Flossy the Frog* to make the most of the sharper screens many schools are now acquiring.

4Mation says its revised versions require computers that can display modes 21 or 28 and that are fitted with a 1.6Mb floppy drive. Upgrades will cost £4.99 inc. VAT per program.

4Mation can be contacted on (0271) 25353.

New mini-graphics tablet

WACOM'S latest pressure-sensitive graphics tablet, the compact and by all accounts very cute ArtPad, is to be supplied by Computer Concepts, complete with an in-house developed Risc OS driver.

At a price expected to be below £200 + VAT, the ArtPad will be half the price of the original A5 Wacom tablet at £399 + VAT, while the A4 version is priced £549 + VAT – all including the new driver software.

It's interesting to note that CC declined to license Eesox's existing Wacom pressure-sensitive driver and developed its own, even though CC does sell bundles with the Eesox pressure tool for *ArtWorks*.

CC's driver code is more compact than that of Eesox and it's easier to implement pen pressure sensing in your own Basic programs using an extended MOUSE command parameter.

The driver will also work with most applications which use pen pressure information, like *PhotoDesk*, *DA's Picture* and *Studio 24*.

Bundles comprising the new ArtPad tablet and *PhotoDesk* as well as the Eesox *ArtWorks* pressure tool will be offered by CC.

All variants will be demonstrated by CC at the forthcoming Acorn World show at the end of October.

Computer Concepts has reduced the prices of scanners and colour printers. The ScanLight 256 monochrome scanner drops from £189 + VAT to £159 + VAT, while the Canon BJC-600 four-colour ink-jet printer has been cut by £80 to £389 + VAT.

Computer Concepts can be contacted on (0442) 63933 or by e-mail on: info@cconcepts.co.uk.

C++ and Ovation 2.0

Beebug will demonstrate the first native C++ compiler for the Acorn platform at Acorn World. Software developers throughout the Acorn world have been impatiently waiting for Acorn to produce a C++ compiler, so Beebug could have a winner on its hands if the compiler measures up. The compiler uses the *Easy C* front-end and is ANSI C/Version 3 C++ compliant. Beebug says the package is scheduled for beta release in November and is expected to cost around £100.

At Acorn World, Beebug will also show version 2.0 of its *Ovation* DTP package, which has a new user-interface plus other unique features. Version 2.0 of the *Sleuth* OCR (Optical Character Recognition) package will be shown too, with improved recognition accuracy, an integrated spelling checker and extended font support. Beebug is on (0727) 840303.

PrimeMover launch

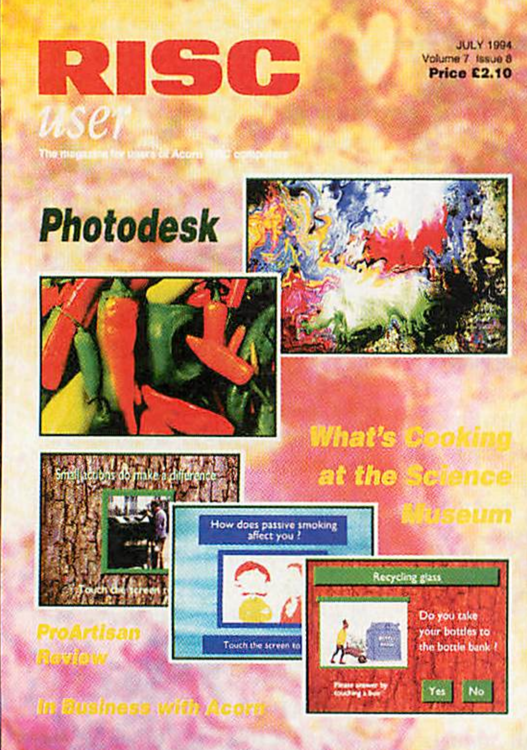
Minerva software is to launch its new animation tool, *PrimeMover*, at Acorn World. The price will be £69.95 inc. VAT. Minerva says *PrimeMover* is more than just an animation frame sequencer as it enables animated sprites to be controlled and moved around the screen in a unique manner using a simple user interface. Created movies can be exported in *ACE* film format. Minerva Software, can be contacted on (0392) 437756, Fax: (0392) 421762.

Acorn Selector guide

Acorn has produced a a guide to IT resources and training courses available to the education sector through Acorn in Education Centres or AECs, across the UK.

The guide, called Acorn Selector, will enable teachers to find out about classroom support literature, software resources, training, workshops and more available from AECs, with information arranged alphabetically and regionally. Copies of Acorn Selector are available free by calling the Acorn hotline on (0800) 800480.

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RISC user

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- RISC User builds into a comprehensive reference source on all aspects of using Acorn computers. Most back issues are still available, together with indexing software allowing you to locate any article quickly.

Recent articles and series in RISC User have included:

Hands-on Multimedia	*practical advice on using multimedia tools*
Using Colour on the Risc PC	*a practical guide to harnessing the new machine's graphic capability in your own programs*
Desktop Publishing for Children	*a look at this popular subject from an educational viewpoint*
Wimp Topics	*a series of programming articles aimed at the serious programmer*
What's Cooking	*behind the scenes at companies such as Computer Concepts, Minerva and Eidos*
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Acorn computers netted by schools

ACORN is now beginning the task of despatching 4000 computers, 6500 peripherals and a further 5300 educational items to over 10,000 schools which participated in this year's Tesco Computers for Schools scheme.

A further 4000 items related to special needs were also claimed, bringing the total number of free items claimed to over 22,000.

In the three years the Tesco's scheme has been run, almost 15,000 Acorn computers have been given away to schools.

Essex was the county which benefitted most from the scheme, netting 392 computers this year, making a total of 1,300 in three years.

Sussex was next up with 273 computers, followed by Hertfordshire on 234 and Buckinghamshire with 200.

Acorn's general manager for UK Education, Peter Talbot, commented: 'The Computers for Schools scheme has once again proved to be a practical and achievable way of improving access to IT in the classroom to enhance learning for children of all ages and abilities.' He added that with recent Acorn research indicating that 18 children had to share a single computer in the average primary school, the 4000 Acorn computers given away this year would have a significant part to play in balancing the pupil/computer ratio.



The launch of the Tesco 'Computers for schools' scheme

Cumana launches CD-Net

IN association with PEP Associates, Cumana has now launched its much talked about *CD-Net* software package for optimised network access to CD-Rom drives on either Acorn or SJ Research Nexus networks.

CD-Net includes *CD-Server* and *CD-Filer* server and client software, respectively. Cumana says that *CD-Net's* optimisations means the system can exceed the performance of CD-Rom drives attached to a single, non-networked computer.

Data transfer-intensive applications like *Replay* movie playback are possible over the network from a CD-Rom using *CD-Net*, though more than one live session isn't usually recommended.

Hereford and Worcester Education Authority's head of IT Services Dave Thomson, commented: 'To date, access to CD-Roms on a network has been extremely slow. Now, thanks to *CD-Net*, schools can start to make effective use of the wealth of CD-Rom software available to them.'

A key file library, which Cumana intends to update regularly, is also supplied which enables users to access network-suitable Risc OS CD-Rom titles. *CD-Net* can also handle Photo CD images, assuming the networked CD-Rom drives are compatible, and a copy of Clares *ProArtisan 2 CD*, 82 full-colour Photo CD sampler CDs plus a 90 day *ProArtisan 2* network licence are supplied.

A discounted voucher for a full upgrade licence is included too. Cumana is also available to supply Risc PC server machines pre-configured with *CD-Net*. The package is priced £150 + VAT. Cumana can be contacted on (0483) 503121 or Fax: (0483) 451371.

New scanners and DSP board

IRLAM Instruments is set to show a range of new colour flat bed scanners from Epson and Canon at Acorn World.

There will also be revised colour hand scanner software and a DSP (digital signal processor) acquisition card for scientific applications, as well as a new combined 24-bit video and 16-bit audio digitiser called 24i16.

The new 24i16 card can capture 24-bit television resolution frames at a resolution of 768x576 in real-time. 16-bit sound can be sampled to disc at the same time in stereo.

It also enables moving images to be captured to a user-defined size, plus there is 16-bit audio playback.

Irlam says these features are unique to the 24i16 in the Acorn scene.

For more information about these scanners contact Irlam Instruments on Tel/Fax: (0895) 811401.

Sibelius 7 goes Royal

The Royal Academy of Music has adopted the Acorn-based *Sibelius 7* system for its music composition course, abandoning its PC computers and software in the process.

The Royal Academy's professor of composition, Paul Patterson, commented: 'When we saw *Sibelius 7* it was clear that it was in a totally different league to anything else.' Sibelius Software is on (0223) 302765.

Risc PC genlock/overlay

Millipede Electronic Graphics has announced a £600 genlock/overlay adaptor for the Risc PC, called AlphaLock. This enables the Risc PC display to be output in either composite or S-Video, PAL or NTSC and accurately combined with an external video signal source.

Pixel-accurate control via the Risc PC's Alpha channel means high quality anti-aliased text and graphics can be combined with a second video source to a professional standard. Millipede will be demonstrating AlphaLock at Acorn World. For more details Tel: (0284) 850594 or Fax: (0284) 850351.

BETT '95 dates

You can tell summer has passed; it's time to remind readers that the technology in education show, BETT '95, is taking place between 11 and 14 January, 1995. The show is now in its 11th year and expects to play host to over 280 companies which supply IT to the education sector. Free tickets are available from the BETT ticket hotline, on 081-984 771.

Autumn A3020 windfall

Acorn is running an Autumn promotion which will net education customers a £50 rebate on all A3020 computers purchased in September and October.

The Autumn Windfall offer is only open to purchases made from authorised Acorn Education Dealers. The Acorn Autumn Windfall hotline is: (0223) 254222.



Cornwall open day

Acorn Users in the West Country have their own Acorn show to attend on 20 November, thanks to Cornwall dealer Microtest. The show will be held in the Cornwall Coliseum, St Austell, and the entire Acorn range from the Pocket Book to the Risc PC will be on display. Exhibitors will include CC, Clares Spacetech, CCS, Digital Services and Aspex; other exhibitors interested in attending should contact Lee Davis on (0208) 73171.

Discovery 2000 Risc PC

The Derby-based Resource Centre has launched a range of education packages based around the new Acorn Risc PC, all of which have, as standard, specially configured early-learning and special needs applications, including the talking word processor *TalkWrite*.

The packages are called Discovery 2000 Risc PCs and are available in a number of hardware configurations, the range being topped by a CD-Rom multimedia-ready model. For more information Tel: (0509) 672222, Fax: (0509) 672267.

Numbertime fun

Longman Logotron and the BBC are to publish a new educational package for the BBC Micro called *Numbertime: Adventures in Numberland*. The software supports BBC Radio broadcasts, is an aid to National Curriculum Maths Level 1 and is designed to be fun to use with puzzles and music.

The price is 24.05 + VAT per copy or £75 + VAT for a site licence. An Archimedes version will be released next year. Longman Logotron, Tel: (01223) 425558, Fax: (01223) 425349.

NEC CD-Rom support

Alsystems has produced customer driver software to enable NEC MultiSpin 3Xi SCSI CD-Rom drives to work on the Acorn Risc OS platform.

Internal Risc PC and external configurations are available starting from £349.95 + VAT. Alsystems is on (0420) 561111.

Headaches looming?

ACORN has started to push its full motion video (FMV) initiative with new hardware add-ons and *Replay* extensions to play MPEG (Motion Pictures Experts Group) coded digital movie files. It's a welcome move, but one not without its potential difficulties when it comes to consumer digital video movie CDs.

Currently there are two types of popular movie CDs out there and not all Acorn users will find their CD-Rom drives can play them. It's a problem which isn't confined to the Acorn world as PC CD-Rom drive owners are discovering that their drives aren't able to play some of these either.

First of all there were so-called 'Green Book' FMV CDs, designed for use with original Philips CD-i (Compact Disc-Interactive) multimedia players. Until earlier this year, the majority of digital movies on CD were Green Book standard but the trend is now towards the newer White Book standard, trademarked as Video CD, which is technically closer to conventional computer CD-Rom specifications.

MPEG-coded movie files can be supplied on standard CD-Roms or be resident on hard disc, and these are not affected by white and green book standards problems. It's only with commercially published consumer CD-i and Video CD disc titles like cinema movies and music videos where disc/drive compatibility is an issue.

The situation echoes the introduction of the Kodak Photo CD format to the Acorn Risc OS platform; not all drives were firmware compatible and those that were required model-specific drivers to work with an upgraded version of Acorn's CDFS operating software.

Acorn is preparing a new version of CDFS, but at present the only CD-Rom drives which have the necessary Risc OS drivers for Green and White Book CDs are Acorn's own MEU (Multimedia Expansion Unit) and the Pioneer DRM 600-series auto-changer units.

We hear that Apple CD300 drives, which use a similar Sony drive unit to the MEU, work too. The Panasonic CR562 mechanism used by Cumana as the SLCD and by Acorn in the Risc PC, has the necessary driver to make it White Book compatible but Acorn is waiting for new firmware from Panasonic for Green Book compatibility.

Green Book CDs are more problematical than White Book ones as they use a different data format, though as time goes by the Green Book CD-i standard will become relatively insignificant in deference to the widely adopted White Book Video CD standard. It's possible that dealers' shelves will contain examples of the same movie in both formats and the advice is to go for the White Book version if possible – check for the Video CD logo.

It will be a while before all the most popular CD-Rom drives will have the necessary drivers to play CD-i and/or Video CDs under Risc OS and some models could remain unsupported.

If you're contemplating the purchase of a new CD-Rom drive, it would be a wise move to check with your supplier that the model you are interested in has, or will eventually get the necessary driver support to make it compatible with Acorn's new system.

At least Acorn users won't be faced with problems PC users are having to contend with. For example, some PC MPEG boards don't seem to work with CD-Rom drives which have the correct firmware specification. Acorn will be testing drives to identify any drive compatibility issues with its MPEG hardware.



Play your movie discs with the new MPEG hardware

Uni-centre desktop workstations

PREMIER Developments, based in Huntingdon, has introduced a family of self-assembly desktop workstations designed to provide a neat and ergonomic arrangement for computers, keyboards and monitors, especially if space is limited.

The range will total seven models and the first three are now available. The first model is open-sided for easy access to ports and has two shelf levels, with the monitor on top and storage space provided below the keyboard.

This version, which is priced at £38.85, would seem ideal for an all-in-one computer like the A3000/3010/3020.

The £42.75 Uni-centre Plus is a wider version for computers requiring space for peripherals like external drives to one side. Uni-plinth is a single level version of the Uni-centre and is priced £31.95.

For more information regarding these workstations, contact Premier Developments on (0480) 823684 or Fax: (0480) 380838.



Pineapple Software Virus Protection Scheme

The Pineapple Software Virus Protection Scheme provides the most comprehensive protection available against computer viruses. !Killer together with VProtect will detect and remove all of the currently known 65 families of virus (98 viruses in total). Because new viruses are being discovered all the time our virus protection scheme will provide you with 3-4 updates of the software each year. We can also offer immediate advice by 'phone. !Killer can scan any filing system or device including floppies, harddiscs, networks, even CDRoms. All types of compressed file can also be scanned. All infected files are fully restored without having to reload from master discs or backups.

Don't wait until you discover you have a virus! Use the software that Acorn themselves use to check for viruses.

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New from Pineapple!

The amazing pressure sensitive Wacom Graphics Tablet from EESOX

A5 £399.00 +vat　A4 £629.00 +vat　A3 £879.00 +vat

Any of the above tablets can be supplied with our Studio24 painting package, which incorporates both opacity and line width control using stylus pressure, at a combined price £80.00 more than those shown above.

BJC600 Colour Printer

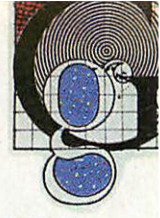
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Studio 24 unleashed

STUDIO 24 started looking like a package with a small number of stunning effects but at a high price. However, the package is now shaping up as a major contender to *PhotoDesk* and *DA's Picture*.

Already well into development are a virtual memory system and an 8-bit mask. For artists who are more eager to produce original artwork than anything else, *Studio 24* promises to be a much better value package than it did previously.

The full release version comes in a beautifully designed box with neatly fitting ring binders housing the user manual. The only thing I'd really like to see now is a revamping of the user interface and a little more directly integrated control over brush shapes and sizes.

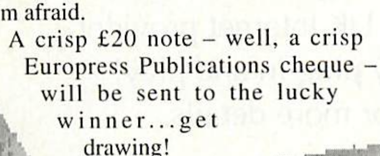
The support for the Eesox pressure sensitive graphics tablets is excellent, with options for both variable density and brush width, making *Studio24* the only package to have implemented both of these so far.

Picture of the month

HAVING seen *Terminator 2* for the umpteenth time, and the *Cyborg Cometh* Equinox documentary recently, I felt as if this was an aptly topical image to win the prize of £20. The name of this piece is Fonzinator – no prizes for guessing why – and it's from Simon E John in West Sussex. Not quite as scary as the liquid metal policeman in *Terminator 2*, but you get the idea.

For Picture of the Month entries, please remember to include details of how you created your piccy – which packages you used and any special techniques you used – and don't forget your name and address. Send your creations on disc to the address at the bottom of this page, but remember: anonymous masterpieces don't win prizes on this page, I'm afraid.

A crisp £20 note – well, a crisp Europress Publications cheque – will be sent to the lucky winner...get drawing!



What is MPEG?

WITH the first Acorn MPEG decompression board already being demonstrated, I thought it wise to explain briefly what the technology is all about, as you will be hearing a lot more about it in the near future.

MPEG is a Moving Picture version of the Joint Photographic Experts Group (JPEG) compression technique. JPEG is widely used for its guaranteed high compression to picture quality characteristics, for storage and modem transfer.

MPEG uses a more advanced version of the technology and compresses video onto CD-Rom. Having seen the Computer Concepts MPEG board in action at Acorn headquarters, I'm very impressed at the quality of sound and vision. The quality surpasses normal VHS videos, and the sound is crystal clear. For more information, have a look at the News pages (page 16), and expect an in-detail look at the world of Video CDs and MPEG very soon.

Ladies and gentleman take your seats: the digital video revolution is about to start!

Show news is good news

Here is the Graphics page's guide of what to look out for at the show.

Irlam Instruments has a number of new digitising and sampling peripherals which they will be revealing for the first time at Acorn World. These include the first digitising camera for the Acorn, which sounds out of this world, and developments specifically for the Risc PC.

Computer Concepts shall be in full force on the graphics front with its revolutionary MPEG decompression technology developed with the added expertise of Wild Vision.

The hardware marks a real advance in desktop multimedia and will provide video from CD-Rom of a quality as yet unattainable by any other means.

Digital Arts, Spacetech, Oregan and Pineapple will be demonstrating the latest guises of their respective art and photoretouching products. Definitely worth seeing in case anything extraordinary will be pulled out of their hats.

Oak Solutions will be another hot stand as it will be launching the long-awaited *Appolonius PDT* CAD program.

To complement that particular package will be an overhauled version of the devastatingly quick morphing program *Rephorm* – something I've been looking forward to since news of its advanced new features emerged at the *Acorn User* show.

Clares is taking the Acorn World venue as an opportunity to launch *ProArtisan 24*. This will be a highlight of the show for graphics users as will be the previewing of *Composition v.0.9*.

You can contact the Graphics Page by writing to Jack Kreindler, at The Graphics Page, *Acorn User*, Europress Publications, Europa House, Adlington Park, Macclesfield SK10 4NP.

In addition, Pics of the month, software suggestions, improvements and general comments can be sent to jack@acornusr.demon.co.uk.

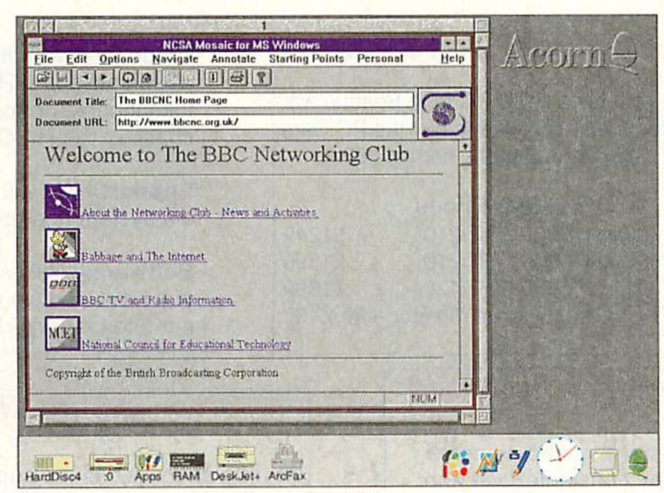




Auntie's web lacking licences

THE BBC Networking club – offering full access and connectivity to the Internet and introducing home users to the wonders of the World Wide Web – admits that it can not yet supply software for prospective Acorn-owning members to connect to the club's Internet BBS called 'Auntie'.

They have assured me that they are not happy with this situation, which arises because licences for use of Acorn-owned parts of the software being developed cannot be given until the *AuntieLink* software interface to the BBS itself is finalised and stable.



A PC owner's view of the World Wide Web

Although they are able to ship 25-30 PC and Mac Internet access packages a day, *AuntieLink* is not quite ready on any platform.

For PC and Mac users, Web browsers such as *Mosaic* are available and come bundled with the software, and there are plenty of BBCNC pages to look at, as well as the whole world of Internet information at the click of a mouse button. No such package exists for Acorn machines yet, and the BBC Networking Club is not able to commission or provide Acorn WWW browser software.

A possible temporary solution is being considered whereby Acorn users with existing Internet access could become associate members by paying a £5 subscription per month, enabling telnet access into the Auntie BBS, or by providing dial-up terminal access to a telnet port into Auntie to use the e-mail and textual facilities.

We ought to consider this lack of Acorn WWW browser software as being a call-to-arms for all Acorn programmers, as the Web is becoming the 'way to go' for the future of Internetworking, and without it, Acorn machines will be left behind.

SWAN services afloat

CLAIMED as the UK's first fully interactive teletext service, *SWAN* has been trial-launched by New Media Services (no, not Acorn's Online Media company).

Anyone with an ordinary teletext television and a tone phone will have the capability to order goods and services, obtain community information and play interactive multi-user games.

Even simple messages and faxes could be sent to other households via the system.

The trial is being conducted in homes that receive the UK Gold satellite channel, but other TV channels have shown interest in the system.

The multi-user interactive game (*AMUSA*) available with *SWAN* is written and conceived by Vic Curshen, well known as Chairman Vick of Silicon Village and author of its *Avatar* games.

AMUSA – A Multi-User Sound Adventure – is controlled by the telephone keypad with full on-screen prompting, and runs on an Archimedes computer linked to the *SWAN* viewdata host. The *AMUSA* game sound effects are heard over the telephone while the action is followed on the television teletext screen.

Viewers from all over Europe will be able to meet and interact with each other within the game.

The first adventure is called *Tower of Evil*, and will change monthly, with prizes for the successful players.

See page 456 on UK Gold Text for details of the trial, and for *AMUSA* information call Vic Curshen on 081-841 2788.

Hayes help Sysops

HAYES Microcomputer Products Inc. has announced a new Sysop program that includes its latest Smartmodem Optima 28800 V.FC Fax, offering it to qualifying Sysops at greatly discounted prices, as well as giving enhanced upgrade and customer support services.

Under the program, the Optima 288 V.FC + Fax is available at the special price of £199 + VAT and shipping (RRP £599), with free upgrade to V.34/V.FC when available. Other items in the program include high-speed ISA serial ports for IBM compatible machines.

Sylvia Allan of Hayes Customer Support told me that they can fax out the agreement documents and if they're completed and faxed back by 3pm the same day with a credit card number, next-day delivery can be expected.

Orders can be e-mailed to hayes@cix.compulink.co.uk or via their Support BBS giving board details, or can be given over the phone on the number below. For more details, call (0252) 775577 or log on to the 'Online with Hayes BBS' on (0252) 775599.

Treasure islands

ARCHIPELAGO BBS is a newcomer to the Essex and Suffolk borders. Sysop Roy Moore has been testing his new Acorn system located near the East Coast ports of Felixstowe and Harwich.

Archipelago BBS should be starting full operation by about now, on a Risc PC running *ARCbbs* software.

Online from 7pm to 7am daily and from 2pm at weekends at 2400 baud, Roy plans to upgrade to V32bis for 24 hours. Archipelago BBS is a local call to users in the Colchester and Ipswich areas on (0255) 553779.

Bug-free termite

A new fully-featured communications software suite called *Termite* is due to be launched at the show by DoggySoft, priced £49.95. An enhanced Demon Internet version at £79.95 with full TCP/IP facilities is planned, allowing access to e-mail, Usenet news, telnet, and ftp.

DoggySoft hopes that WWW support will be in place in time for the show. An Internet plug-and-play package will be available consisting of Sportster modem, software and Demon Internet subscription at a price to be announced at the show.

Samaritans online

A test launch of 'Help by E-mail' earlier this year by the Samaritans, who have been offering emotional support to the despairing for 40 years has proved so successful that an Internet domain is now open.

The service is run from Cheltenham, Gloucestershire but can be accessed from anywhere in the world, with Internet access by e-mailing joe@samaritans.org. There's also an address on the Finnish anonymous mail server which is samaritans@anon.penet.fi.

Write to David Dade, Acorn User, Europress Publications Ltd, Europa House, Adlington Park, Macclesfield, SK10 4NP. E-mail to DaviD@arcade.demon.co.uk, Netmail to DaviD Dade FidoNet#2:254/27.0 or mail #2 on Arcade BBS 081 654 2212.



Reproduction house blues

TAME reproduction houses are few and far between, so should you find one, hold onto it. This is some of the best advice around, especially for Acorn users. Mac bureaux are ten a penny but finding one that's heard of, let alone willing to accept stuff from the Arc, is no small feat.

Reproduction houses provide all sorts of services, although much of what they do overlaps with aspects of either DTP or printing, so a strict definition of their role is impossible.

They often offer high quality scanning and photo-retouching as well as OPI services, and produce proofs of your documents and the films/plates that will actually be used to print the final product.

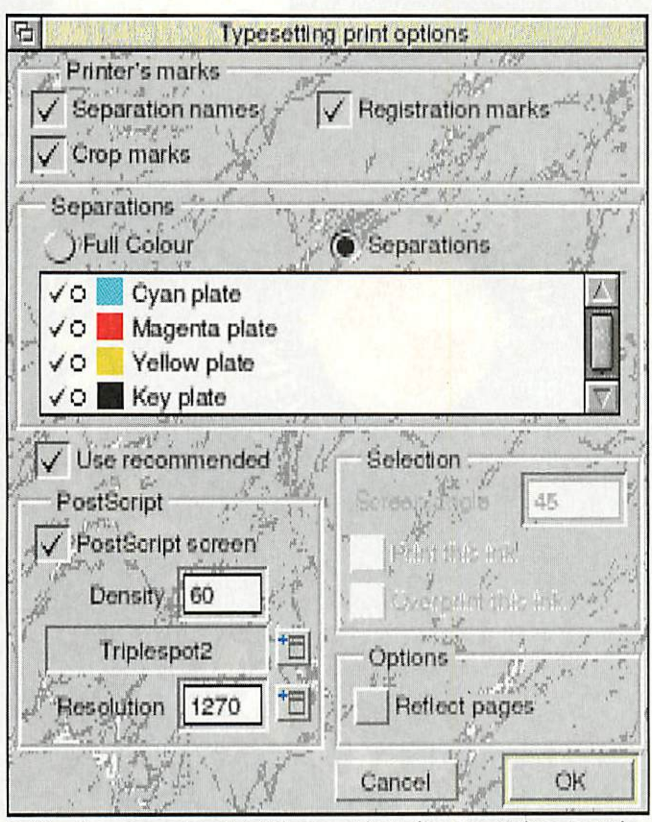
Most repro houses can arrange for the printing, binding and finishing of your documents and some even do it in-house.

The services they offer and the prices you pay tend to vary wildly and the more expensive ones aren't necessarily worth the extra pennies; it's usually a lot more than pennies. Mind you, if you get too cheap it's fair to say that you get what you pay for.

I've used several repro houses over the last couple of years and encountered more than a few problems converting stuff to and from various formats be they PC, Mac or 'industry standards'.

For film output or proofing you normally need to send your repro house a PostScript file that they'll use. I've submitted such files on both DOS discs and more recently Mac discs using *MacFS*, although I've yet to try using Syquest devices. The data seems to get there in one piece or even several pieces when I've had to spread a file across several discs.

Most of the problems I've encountered centre around fonts. Many Acorn fonts, though identical to PostScript fonts, use different names for licensing reasons and making sure that your PostScript printer driver converts these correctly isn't a task for the squeamish, although it is thankfully a task you'll only have to do once.



Getting from screen to printed document isn't always easy since Acorn is still a dirty word among many bureaux

The real problem with fonts is when you use a font that doesn't have a PostScript equivalent. PostScript files have the ability to include the font data in the output file so this should be no problem at all. Apart from increasing the size of the file (they're pretty big to begin with) I've often had problems getting Mac-based typesetters to accept the PostScript file afterwards.

Short of finding a PostScript programmer who can decode the obscure error messages that the typesetter usually spews out, I've found that the only real solution is to avoid using the fonts concerned or use as little text as possible and render it as a graphic through *Draw* by converting the text to paths.

Other font problems occur when the PostScript font's spacing differs slightly from the Acorn version. This means that your text reformats slightly since the sentences change in length, but the boxes containing them don't and as a result widows, orphans and other unpleasant typographical effects occur. I haven't experienced any such problems with any of my licensed 'professional' fonts but some of my Type 1 converted fonts have suffered from this malaise. There is no easy workaround for this apart from redesigning using different fonts that work. As long as you get your fonts right everything appears to run smoothly, although I have noticed a tendency for heavy blue colour drift on some of my bitmaps, which *Publisher* appears to have corrected thanks to its colour tables.

The real trick in getting it right is to talk very carefully to any repro house you intend to use. Let them know what you need and discuss with them compatibility issues and any potential problems.

I've never used TJ Reproductions (071-372 4430) for geographic reasons, but if you're near London and need an Acorn conversant repro house then you can solve an awful lot of problems in one go by using them.

If there are any other Acorn-friendly repro houses out there, I'd love to hear from you.

Pretty in print

Another company offering some very high quality pre-printed and unprinted papers for use with lasers and inkjets is Paper Direct.

Paper Direct has a range of pre-printed headed paper, leaflets, labels, business cards and folders, as well as a range of high quality unprinted papers. These can add a touch of colour, or just give your printouts a more professional feel, without going to the expense of getting a full colour printer.

A sample pack of the entire range costs £19.95 and Paper Direct can be contacted on (0800) 616244.

Lasers vs Inkjets – round 2

Even as Inkjets lay siege to the budget colour printing market, the first sub £10,000 full colour laser printer is expected in the very near future. While this hardly brings it into the 'budget' league, the new colour laser is considerably cheaper than its forbears which weighed in at $25,000 or more. These were true 'if you need to ask the price, you can't afford it' devices.

Colour lasers offer far better results than inkjets and even out perform dye-sublimation printers which are the current standard for colour proofing. Apart from offering higher resolutions, greater accuracy and comparable colour reproduction, colour lasers are reportedly cheaper to run than their dye-sublimation counterparts, which at an excess of £1 per page is no small consideration.

Though the price has dropped dramatically, it's expected that it will be some time before colour lasers will be affordable for home or small business users. However, industry analysts expect the first sub-$5000 full colour laser to be available by this time next year.

You can contact the DTP page by writing to: Steve Powell, Acorn User, Europress Publications Ltd, Europa House, Adlington Park, Macclesfield, SK10 4NP, or by e-mail to stevep@wibble.co.uk



Powerful Image

THE public domain is always a great source of tools for the graphics user, and has usually filled the gaps left by the full commercial packages.

Image, the shareware processing package from Ian Palmer, takes a detour from this usual scenario by providing an excellent piece of budget software that goes much further than the usual range of graphics related PD.

System requirements are high for this piece of PD software, with a hard disk and at least 2Mb of Ram required. But given the memory-hungry task of editing 24-bit graphics files, this is not unreasonable.

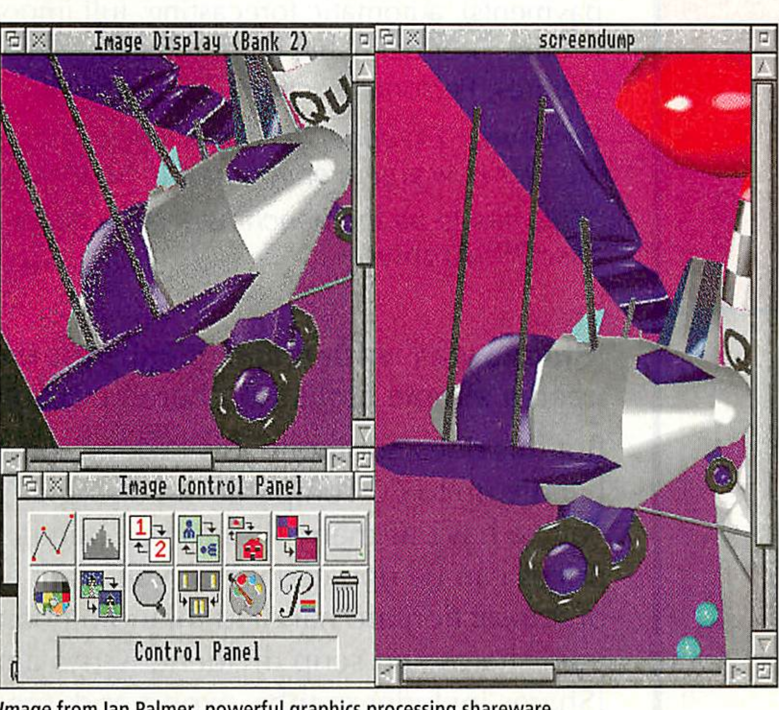


Image **from Ian Palmer, powerful graphics processing shareware**

The most important part of the program is the system of Image banks. Graphics files being processed are stored in a temporary directory on hard disk, which reduces the memory requirements, and gives a failsafe against powercuts or system crashes.

Each image bank holds a 24-bit sprite which can be processed, edited or merged with any of the other banks. The range of features is too great to describe in detail here, but suffice to say that *Image* can perform most of the colour and image editing processes required.

Although *Image* is an excellent way for 8-bit graphics users to edit full 24-bit files via the JPEG, PBM and Clear import facility, it also offers some very handy effects which can be performed on 8-bit sprites.

The method of storing 8-bit graphics files as 24-bits of data for processing gives a much more accurate base for editing and produces good results. Used either as a standalone program, or as a handy utility to plug those gaps in your other packages, *Image* is highly recommended.

My registration is already in the post, but for those of you wanting to trial the package, an unregistered version is on disk PR15 from: Five Star Marketing, 4 Shepherds Walk, Bushey, Herts, WD2 1LZ.

To register send £12 to: Ian Palmer, 40 Birch Crescent, Aylesford, Kent, ME20 7QE.

Fortran Friends gives support

AS PD editor I'm always interested in featuring user groups who have managed to plug a major gap in the world of commercial software with some down to earth and downright useful PD software.

The 'Fortran Friends' group, formed by scientist Kate Crennell, is a perfect example. Despite Fortran being a well established and popular language in the scientific computing scene, it's taken a group of enthusiasts and the idea of PD to produce real support for the compiler language on Acorn machines.

Kate Crennell of FF says: 'Apparently Acorn has taken the sensible business approach and decided that they cannot afford to support Fortran on the Archimedes, since they appear to be unaware of the lucrative workstation markets in engineering design, and that most engineers write in Fortran.'

Several problems with the Fortran 77 compiler have seriously limited the usefulness of the language and have restricted access to libraries written for other languages which do support the proper APCS calls.

This is where Fortran Friends' mini library of support disks comes in.

Disk 1 contains a Desktop Development Environment for Fortran 77 as well as a collection of graphics and low-level WIMP libraries.

Disk 2 contains the complete *WimpPoly* application, ideal for research scientists and education users interested in polyhedra.

Disk 3 is the latest release of *PGPlot*, the sub-routine package widely used on mainframe computers developed for the Caltech Astronomy Department.

All the disks cost only £2 each direct from Kate Crennell who can be contacted at the following address: PO Box 64, Didcot, Oxon, OX11 0TH.

Arcturus library

After recently opening a brand new PD library based in Dorset, 14 year old Michael Richards is looking to expand his new service further.

Although working to a very tight budget, Michael has created a very cost-effective library which offers standard DD discs for only 90 pence each, with a free disk for the first order.

HD discs are cheaper and a points system giving extra free disks to regular customers should be introduced soon.

To support Michael's venture send an SAE to: Arcturus, 3 Sunnybank Drive, Colehill, Wimborne, Dorset, BH1 2SZ. Watch out for reports on Arcturus over the next few months.

Five Star cat

Following the release of new catalogues by many libraries on the scene, Five Star is planning the introduction of its own desktop ordering system. Two programs are currently being considered, and a preview of coder Paul Solecki's software already looks promising. Watch this space for a full review soon.

Acorn World

The Wembley shows have always proved to be *the* location to release a new demo onto the scene, and this year's show looks to be no exception.

Taking centre stage will be a brand new production coded specifically to show off the power of the Risc PC. The demo is still under wraps as I write, but if all goes well the team of coders which includes *Darkhorse* author Kuldip Pardesi should have it on our screens at the show.

Come along to the PD meet up at Acorn World on the Saturday afternoon, 2pm at the *Acorn User* stand. I'll be on hand to discuss PD issues and check out the latest demo releases.

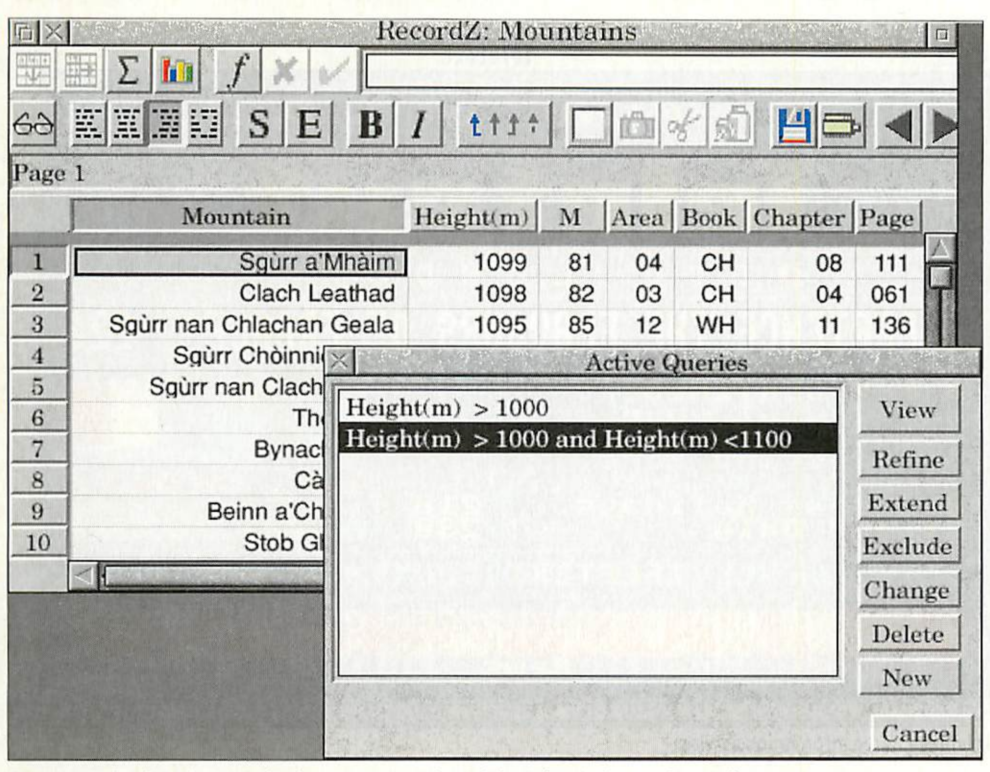
You can contact the PD Page by writing to: Paul Wheatley, Acorn User, Europress Publications Ltd, Europa House, Adlington Park, Macclesfield SK10 4NP, or by e-mail to: paul@acornusr.demon.co.uk


VISA


Access



Major new releases at show



Querying a database in *Recordz*, the newest member of the Z-family from Colton Software

A NEW integrated package is set to be released at the Acorn World Show this October by Colton Software the company behind *Wordz*, *Resultz* and *FireWorkz*.

Fireworkz Pro, which is effectively *Fireworkz* but with a database added, will be the definitive integrated package for the Acorn range and will retail at £149 + VAT.

This will mean that Colton's summer offer price for *Fireworkz* (the original version) will become the permanent price of £99 + VAT.

When Mark Colton, the managing director and founder of Colton Software, was asked why he wrote integrated packages as opposed to separate applications, he explained that it is 'the best way to design applications', and, because most users use more than one package 'you only need to learn one user interface.'

While at the time of writing I've not had a chance to use the package, personal experience indicates that separate packages almost certainly have a greater number of features.

However buying *Impression Style*, *DataPower* and *Eureka* together would cost twice the price. Really, for a small business, an integrated package would be perfectly adequate, perhaps using *Impression* to do more elaborate documents.

Also from Colton Software will be *Recordz*, the database which is integrated into *Fireworkz Pro*. This completes the development of the Z-family of separate packages which can be combined together at will.

For more information Colton Software can be contacted on (0223) 311881.

The show will also be the first chance to see *PayMaster*, the latest addition to the *Enterprise Accounts* range.

It is a payroll module which can either be used separately from, or integrated with, other *Enterprise Accounts* modules.

It calculates tax, National Insurance and pension amounts and prints payslips as well as other documents required by the Inland Revenue. Any other information regarding this package can be obtained from ACP Ltd who can be contacted on (0276) 472046.

On Apricote Studios' stand will be a comparative demonstration between *Prophet* and leading PC packages such as *Sage*, as well as updated versions of *Prophet* and *Personal Accounts* for sale.

Health and safety at work

THOSE of you who are still employing computer operators to use monitors without tilt/swivel bases are breaking the law.

The Health and Safety Regulations at Work also entitle full-time operators to regular breaks away from the computer and/or time doing other jobs.

Companies must also use software which is within the capabilities of their employees (no comments about the user-friendliness of Windows here, thank you).

A full copy of the Health and Safety Regulations at work are available from either HMSO or your local library.

The new column

BACK in the early days of the Arc, native business software was scarce so, just for you, we wrote a PC column (ugh!). Seven years later and there's a whole mass of software available for the office.

There has been a rapid production lately of business software for Acorns. I'm rather amazed at the range of quality accounts packages and the number is growing all the time.

I've been an Acorn fan for years, although I do use PCs as well. I started my computing life with a BBC micro prior to purchasing an Archimedes.

In future issues I hope to include a jargon-free guide to Network Analysis (i.e. Project Management software) and a look into offices which use Acorns. Next month, I'll be showing you how A3010s can revolutionise your corner shop.

If there's anything you feel needs to be covered, or you just disagree, or even agree, with something I've said, please contact me at the address below.

Historic changes

THERE seems to be an argument in the Acorn world over whether accounts software should allow historic changes to be made by the user.

While ACP (the new name for PRES) believes that mistakes should be corrected with credit notes, Apricote Studios believes that all entries should be editable at *any* time.

So, as a sort of survey, please write to me with details of any experience you have with accountancy, the packages you've used and, of course, your viewpoint.

You can contact the Business page by writing to: Alex Singleton, Acorn User, Europress Publications Ltd, Europa House, Macclesfield SK10 4NP, or by e-mail to alex@acornusr.demon.co.uk.



What ever happened to teletext?

SHORTLY after the launch of the BBC micro, a teletext adaptor was listed as one of its add-ons.

Teletext is a service provided by most television channels and is a common feature of many television sets.

Data is transmitted as part of normal television transmission and, with a suitable decoder inside the set, is converted into pages of text which can be accessed from the remote control handset.

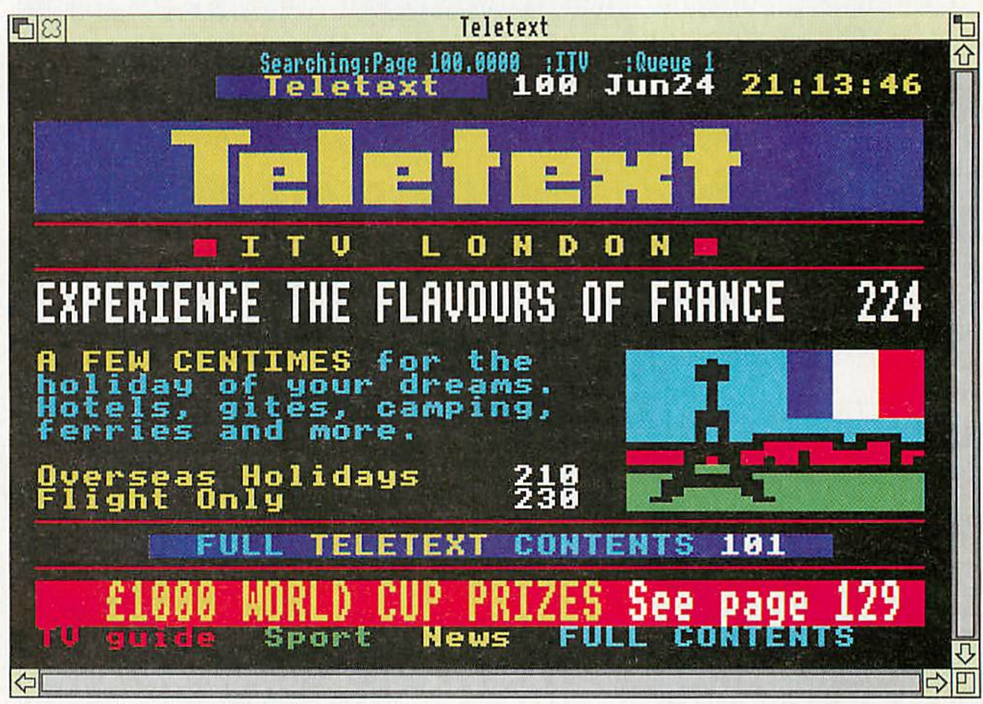
A teletext adaptor enables the computer user to access exactly the same information, but with the advantage of being able to extract and edit the text.

In the early days of the BBC micro, computer programs were broadcast and could be downloaded into the computer.

This so-called 'telesoftware' died a death when programs became so large that it was no longer practical to distribute them in this way.

From the computer users' point of view, teletext no longer looked attractive which is a pity, because I believe the service still has a lot to offer.

Evidently others share my feelings because, in addition to the teletext adaptors already produced by Ground Control and Morley, two new adaptors have recently been launched – XOB's Telecard and Design IT's Teleview.



Teletext – a free information service

Teletext still has great potential for schools, even without telesoftware. There is a huge amount of current data available which can be extracted and used to feed spreadsheets, graphing programs and databases, as well as downloading text and pages as graphics for inclusion into word processed documents.

One feature is that it's free. That is to say, once you've paid for the adaptor card – about £150 – that's it.

There's no more outlay, assuming the school already has a TV licence and there's an aerial close by. There are no phone bills and no subscription charge. Both XOB and Design IT can also provide software, enabling all clients on a network to access teletext.

Ian Burley will be doing a full review of both of these cards soon.

XOB can be contacted on (0307) 840364 and Design IT on (0902) 894775.

More clip art on show

MY COMMENT in the April issue about the poor quality clip art around certainly has stirred up a veritable hornet's nest. Primary Education Software agrees and has produced a pick 'n' mix catalogue of really good hand-drawn *Draw* clip art for £15 per disc.

You start by purchasing the catalogue for £2 (refundable against your first order). Each picture is printed with the size in kilobytes. You browse through the catalogue and fill out the order form with a maximum of 800K of clip art per disc.

A great deal of this material will be of use to teachers preparing material for Key Stages two and three in History, Geography and Religious Studies, to name but three.

The quality is excellent, but the best part of this scheme is that you just buy what you need and no more. PES can be contacted on (0533) 733063.

Key Plus files from Anglia

ANGLIA has produced two new data packs for the popular Key series of data handling programs. There is a growing collection of titles which use the database programs *Key Plus*, the spreadsheet program *Key Calc* and *Key Plus Maps*.

Lenses and Light (£22) is a two disc pack containing both *Key Plus* datafiles and *Key Calc* spreadsheet files.

The accompanying booklet contains a investigations, each of which refer to specific files on the disc to help students explore how lenses work and the science of light. Also included are notes and guidance for the teacher.

The Civil War (£22) comprises a disc and an A4 booklet in which a number of study sheets are provided. Again these refer directly to the disc files and give the user the opportunity to search out the relevant information.

Anglia can be contacted on (0603) 615151.

Shipping Cumana's CD-Net

CUMANA /PEP Associates' *CD-Net* is now being shipped (see July issue page 41).

There have been a great many improvements to an already powerful program, including better cacheing.

On the cover disc is a textfile listing the software keys supplied with the pack. Details of new keys will appear in these pages as soon as they are available.

Cumana can be contacted on (0483) 503121.

You can contact the Education Page by writing to Geoff Preston at Acorn User, Europress Publications, Europa House, Adlington Park, Macclesfield SK10 4NP by or e-mail to GPreston@arcade.demon.co.uk.

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WHY NOT COME AND SEE IT ON STAND 87 AT ACORN WORLD'94?

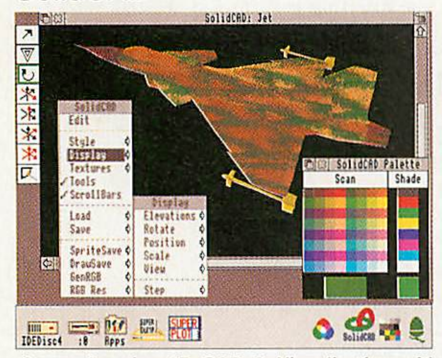
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Wellington Court. Cambridge CB1 1HZ
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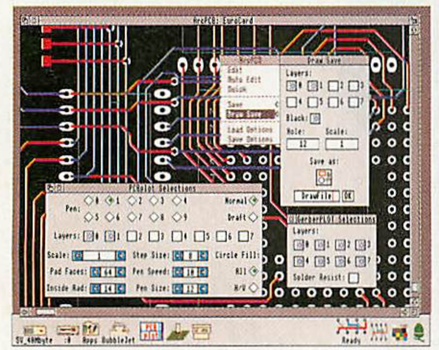
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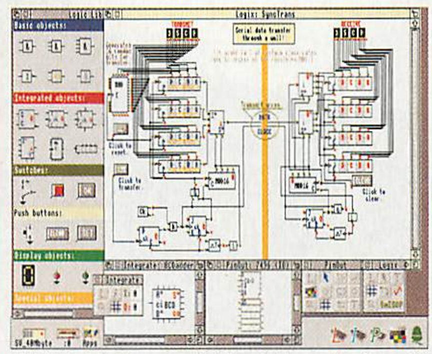
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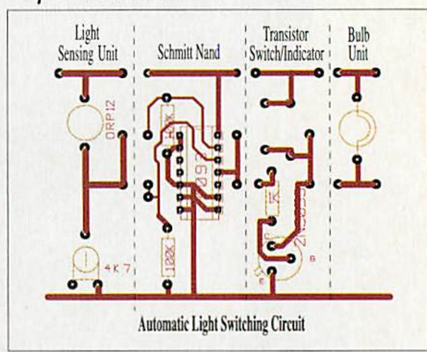
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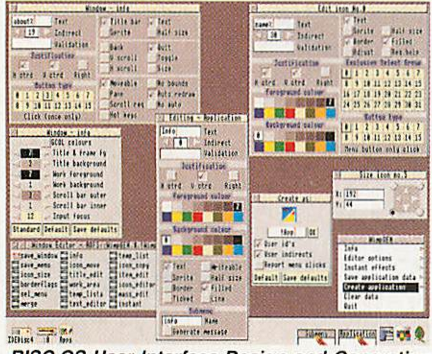
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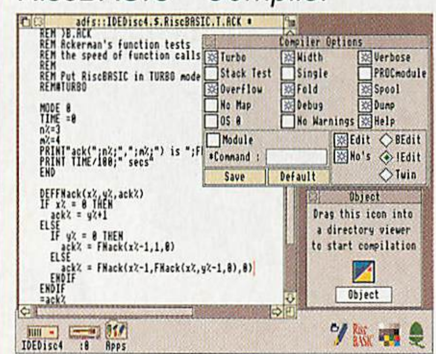
The complete Electronics Teaching Course for Schools based on ArcPCB. Site License: £75

WimpGEN™



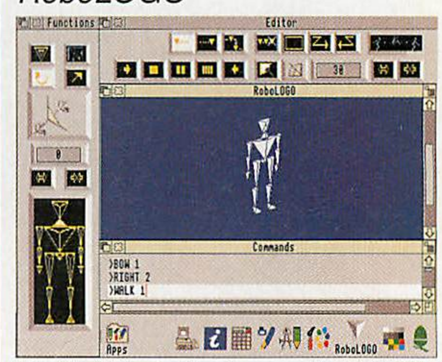
RISC OS User Interface Design and Generation tool for rapid applications development. £79.95

RiscBASIC™ Compiler



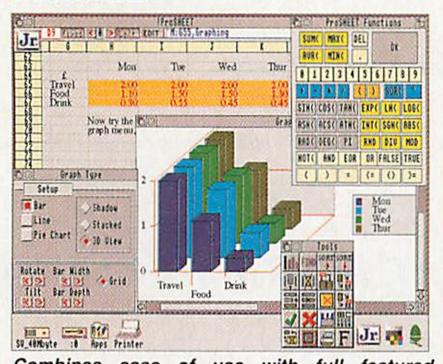
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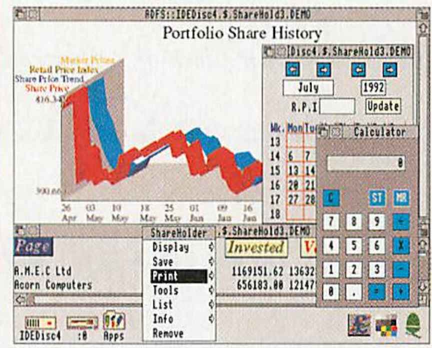
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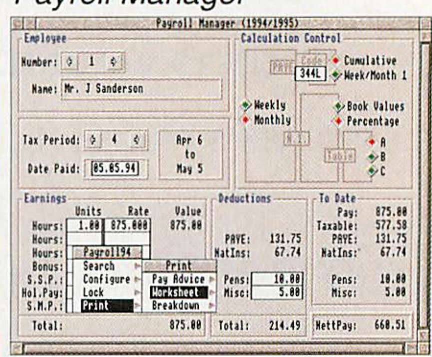
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THE ACORN USER COVER DISC

AltBoot

By David Matthewman



This is for Risc PC owners, and those who have imitated the Risc PC boot structure

Anyone getting to grips with the Risc PC boot sequence – as we do in the Questions and Answers pages of the magazine – will notice that several important directories are buried deep in the boot structure.

The three most-used directories are the ones containing applications etc. to be run before and after the Desktop is entered, and the one containing applications to be booted after the Desktop is entered.

On the cover disc is a small set of files to enable these directories to be opened by double-clicking on *!Boot* with the left-hand Alt key held down, and closed again by double-clicking with the right-hand Alt key held down.

To install it, the files in the *X!Boot* directory on the cover disc must be copied into the *!Boot* directory on your hard disc. The *CheckAlt* file and the files in the *Utils* directory will be added to your *!Boot* directory structure, but the *!Run* file will have to replace the one in your *!Boot*.

You will have to unlock your existing *!Run* file to do this – take a copy just in case anything goes wrong. Alternatively, if you have already changed your *!Boot.!Run* file then you can copy the relevant lines from the *!Run* file on the disc to the *!Run* file in your *!Boot* directory. The lines are commented to help you do this, but if you are into hacking Obey files then you probably know what you are doing.

The *MakeCheck* Basic Assembler program is the source code for the *CheckAlt* utility, and can be altered to check for other keys being pressed, if you feel so inclined. The *OpenDirs* and *CloseDirs* Obey files in the *Utils* directory can also be customised if you wish to open and close other directories.

Report writer demo

By Creative Curriculum Software

Note: before running the *Report Writer* demonstration, the *Reports* application must be copied to another disc, as it can get confused if it is run from an archive.

Report Writer is a package to help teachers prepare reports on pupils quickly and accurately, by allowing easy access to National Curriculum Statements of achievement and a number of other statements and commonly used phrases.

Since it enters text wherever the caret is positioned, it can be used to enter these phrases in the middle of a fuller report on the pupil which is being prepared by the teacher.

This demonstration version contains Speaking and Listening statements and supports advice for Key Stages One and Two only. These may be accessed, edited and entered into your report. User lists may not be created in this demo version.

There is a tutorial for the demo in the *ReadMe* file which is in the *RepWriter* archive. The full copy of *Report Writer* costs £49 + VAT (primary site licence £89 + VAT, secondary site licence £149 + VAT) and is available from Creative Curriculum Software on (0422) 340524 or fax (0422) 346388.

Article tie-ins

A number of the archives on the disc tie-in with articles elsewhere in the magazine:

- The *C* archive contains two programs illustrating aspects of the C for yourself article on C programming.
- The *Education* archive contains two *Draw* files associated with the *FirstPage* review, and a list of *CD-Net* compatible CD-Roms.
- The *Pic* archive contains the picture of the month from the graphics page.
- The *StarInfo* archive contains all the programs described in the *INFO section of the magazine.

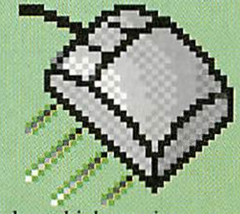
HomeWorks

...or lack thereof

Due to illness in the Insight programming team, the graphing instalment of the *HomeWorks* package was not fully bug-tested in time for this issue. Don't worry, *Acorn User's* finest ever cover disc application will return next month to stun us all with its graphing prowess.

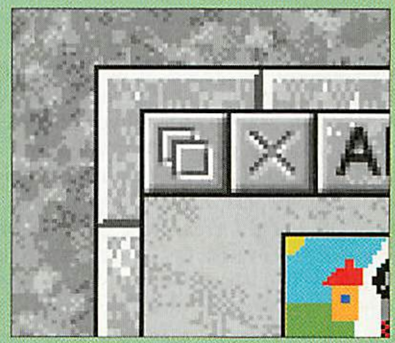
Desktop utilities

By Nick Jarman



Nick has provided a set of useful modules which can improve the operation of your desktop:

- *FwdTools* is a set of 'plain' 3D tool sprites, for those who dislike fussy, marbled title bars and sliders on their windows.
- *Resizer* puts a border round every window, which can be dragged to resize the window in any direction. Holding down Shift moves the window rather than resizing it. More details are in the *!Help* file inside *Resizer*. By an extraordinary coincidence, *INFO this month has a program to demonstrate the use of filters which allows a window to be resized by dragging the title bar. Take your pick....
- *SaveDesk* saves the state of the Desktop whenever the computer is shut down by using Ctrl-Shift-F12. Full instructions for installing the program are given in the *!Help* file inside *SaveDesk*.
- *Scaler* accelerates your mouse. The faster you move the mouse, the greater the mouse step. This means that you can still do intricate pixel-by-pixel work by moving the mouse slowly, while being able to race from one side of the screen to the other if you need to.



On an A4, this is probably a disadvantage, but in a 1280 by 1024 mode using a 21in monitor on a Risc PC, you soon appreciate this little module.

All the programs except *Scaler* require Risc OS 3 or greater to run.

CO_2 effect





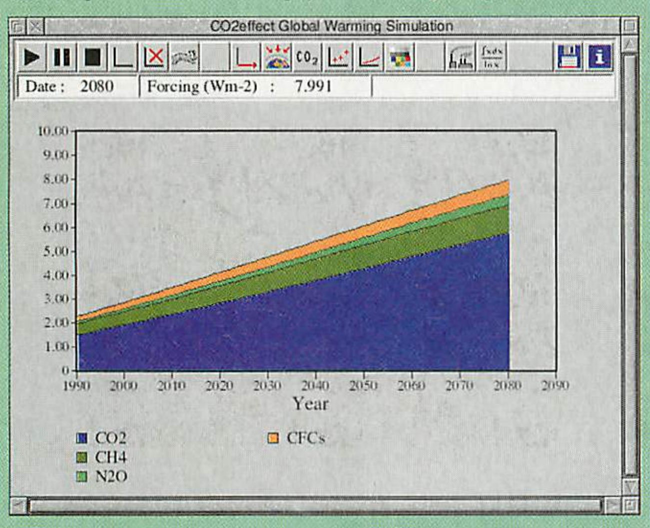
By Bandy Ridgwell

CO2Effect is a program which models the concentration of 'greenhouse gases' in the atmosphere, and their effect upon surface temperature. The program uses various models to predict how the levels may change in the future.

For details about the program, see the *!Help* file inside the application. The program supports interactive help, which is useful to find out what all the buttons on the tool bar do. When the program is first run, clicking on the *CO2Effect* icon on the icon bar will open a window on which a graph of temperature and CO2 concentration may be drawn. The graph is drawn by clicking on the 'play' button on the left of the tool bar.

Other buttons on the tool bar control the appearance of the display and the simulation used. The 'emissions' button – with factories belching smoke – opens a tool window from which various parameters can be altered to change the simulation. Many more parameters in the full version can be changed than in this demo.

In order to see the effect of changes in the simulation, the graph muse be 'updated' – the factory with an arrow icon three rows down on the tool bar – and 'cleared' – the axis button with a red cross fifth from the left in the graph window – before being redrawn. If you are interested in more detailed modelling of global warming, the full version of the program and information on assumptions used in the modelling can be obtained from: 390 Milton Road, Cambridge, CB4 1SU. The full version costs £10, and cheques should be made payable to Andy Ridgwell.



Disc problems?

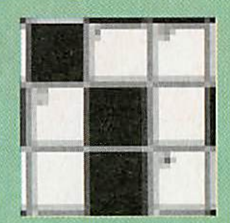
Our cover discs are thoroughly tested at every stage of production, but one or two faulty discs may slip through. If you suspect that you have a faulty disc, check whether it verifies by choosing 'Verify' from the menu produced from the floppy disc icon on the icon bar.

If the disc does *not* verify, then it is physically faulty and should be returned to: PC Wise, Dowlais Top Business Park, Dowlais, Merthr Tydfil, Mid Glamorgan CF48 2YY, who will replace the disc free of charge. If it does verify, contact the editorial office at the address given on the contents page.

Many of the programs on the cover disc do not work with Risc OS 2, although the menu and archiving system on the disc does. Developers are no longer required by Acorn to support Risc OS 2, and increasingly software writers are finding it hard to get access to Risc OS 2 machines to test their software.

The *Acorn User* cover disc has been checked for viruses using *Killer* version 1.801 from Pineapple Software

Crossword font



By Anthony Judd

Here's a handy piece of software for all the crossword compilers among you – a font to use in designing crosswords. The font allows you to create crossword grids, and to type solutions into ready-created grids. It does this by giving the font an unusual set of IntMetrics; some of the characters do not advance the cursor at all. For this reason *never* apply automatic kerning programs to the font.

In general, blank squares are entered using spaces and filled squares using full stops. The first row in any grid is a series of apostrophes which create the top line, and the last character in each row is a semicolon. Letters entered in upper-case have boxes round them and advance the caret by one square; lower case letters have no box, don't advance the caret and can be used to enter solutions.

The font can also number clues – up to 9999, a pretty big crossword – and use a number of different patterns to separate clues. Full details are in the *XwordText* file and several examples are shown in the *Impression* document *XWexample*.

To use the font, copy the *XWord* directory to your *!Fonts* directory. You may need to double-click on the*!Fonts* directory to make the system re-scan the font path and update its font list to include the new font, and some applications which are running at the time may need to be reloaded.

Screen saver



By Iota Software

Mellow Out is a screen saver from Iota Software which plays files generated by Iota's *Animator* software; see the review in this issue of *Acorn User*. It is provided with an hourglass animation, but any generated by *Animator* can be used. It will even play sounds – it is well-known that a screen saver with an insidious, repetative soundtrack is *the* way to annoy everyone else in the office – and has the usual range of options to set the blank delay and so on.

As *Mellow Out* is written in Basic, the program may be loaded into a text editor in order to find out how to play back *Animator* files.

Nigel Gatherer's clip art column

By Nigel Gatherer



This month, Nigel has produced a page full of intricate ornamental designs which can be used as the basis for document borders, or just to add a touch of class to your letterhead. As always, they are conveniently grouped in *Draw* format, so that individual designs can be selected, copied and re-arranged however you want.



The unrivalled quality of the long standing Vision digitiser is now available in full, 24 bit, photo-realistic colour.

Vision 24 like its predecessors accepts any PAL video signal from a wide variety of equipment including VCR, hand held Video Cameras, Canon Ion Cameras, most TVs and even Laserdisc Players! Simply plug in the video with the lead supplied. The Vision 24 application allows you to save images as Sprites - which you could then use in any DTP document, like this one.

As you can see the 24 bit images are amazing, but if you don't have a Risc PC or a Colour Card don't despair! Vision 24 will let you process 24 bit pictures anyway as well as 256 grey levels (8 bit), 256 colours (8 bit) and 32 thousand colours (16 bit).

Like other digitisers Vision 24 comes in the standard interface card type. Unlike any other digitiser Vision 24 is also available in A3000 internal format as well as the celebrated Ultimate Expansion System MicroPodule format.

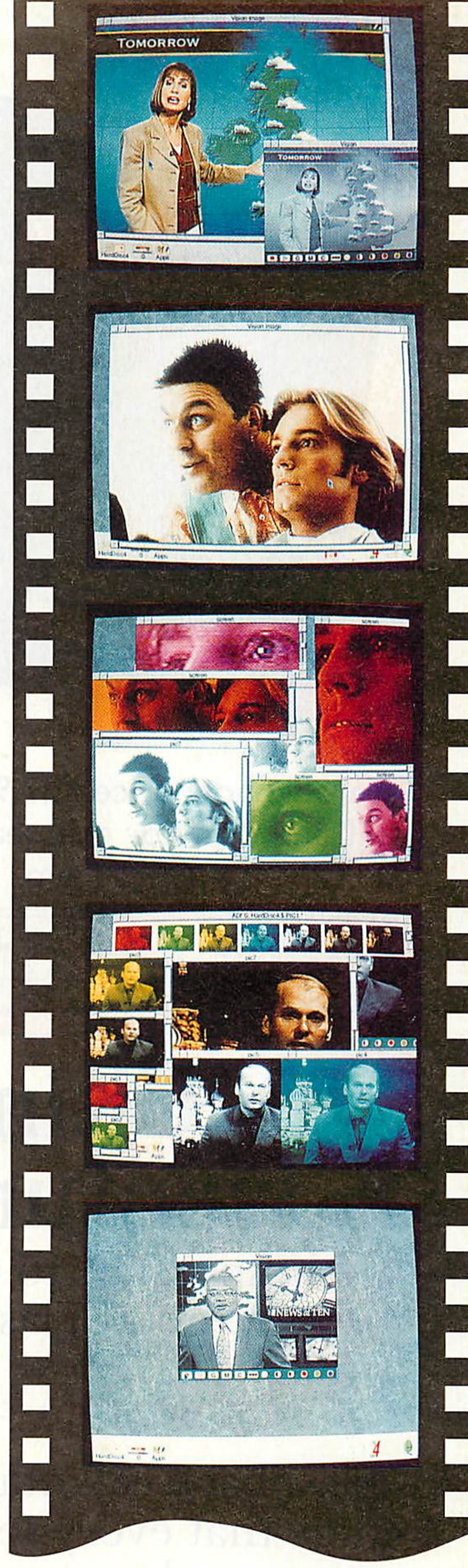
Like other digitisers Vision 24 produces a large 254 line by 720 pixel picture size, unlike other digitisers it is upgradable to 508 line by 720 pixel.

The new Vision 24 application provides the Multimedia User with quick easy-to-use tools for getting the right frame, first time. Post processing of RGB, Contrast, Brightness and overall Colour Saturation is a feature you will not find on any other digitiser.

Vision 24 will not break the capacity bank either since it is shipped with a FREE copy of Irlam Instruments ImageBank LITE JPEG compressor and library application. This files your images with a small thumbnail, so you can browse your repertoire at a glance.

Vision 24 254 line unlike any other 24 bit real time colour digitiser is only £99.00 +VAT for any Acorn desktop computer. Vision 24 508 line is £139.00 + VAT and carriage is free anywhere in the UK.

Unlike any other digitisers, owners of our Black and White digitiser or colour digitisers can upgrade to 24 bit colour with the Vision 24 upgrade pack, £79.00 + VAT normally but available at discount to registered users.





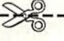
- ❑ Please send me more information on Vision 24
- ❑ Please send me a Vision 24 254 line at £99.00 + VAT
- ❑ Please send me a Vision 24 508 line at £139.00 + VAT
- ❑ Please send me a Vision upgrade at £79.00 + VAT
- ❑ Please find enclosed my Vision registration
- ❑ Please send me a 508 line upgrade at £49.00 + VAT

My name (including initials) and address is:

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- ❑ A300/A400 A5000/RPC600
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World party

Gear up for Christmas with the biggest Wembley event since Live Aid...

It's here again... the Acorn World '94 Show. Last year saw Wembley Exhibition Centre packed with the cream of the Acorn market, and this year will be no exception.

Our six-page stand-by-stand guide, starting on page 38, proves just how varied the Acorn marketplace is, and how the Risc PC has livened things up: if you miss this year's event, you'll definitely miss out.

The show runs from 28-30 October 1994, and is being held in Wembley Exhibition Hall One. It's easy to get to Wembley – take a look at the map for directions – and this is *the* chance for all those who couldn't get to Harrogate to see the amazing Risc PC.

Weird and wonderful

If you went to last year's Wembley show, you'll remember all the wacky face painters and jugglers, and you'll be pleased to know that they're back. We at *Acorn User* are very pleased about this; the juggling entertainment next to our stand was top notch.

All this points to the whole feel of the show: it's not just a showcase for the best new developments in DTP, education, graphics and games, but it's also a family show, with something for everyone. Bring the whole family: there's a crèche for the youngest visitors, a games arcade for the alien bashers among us, the Laser Labyrinth for those who have excess energy to spare and, of course, serious stands displaying the latest technological achievements in the Acorn scene.

Acorn has some particularly exciting innovations to show off, including a 'rocket ship' Risc PC with seven slices – there can't be many of those around! For those interested in serious processing power, there's a new five-processor card for attaching up to five Arm processors to the Risc PC, and if networking is your thing, you'll be able to see CD-Roms on Access networks, and Microsoft and Novell-based servers for Risc OS applications.

Meet the team

As co-sponsors of the show, the *Acorn User* team will be out in strength, ready to answer your questions and help you make the most of the show. We'll also be starring in the theatre, describing how magazines can be put together on the Acorn platform. We might be on Macs now, but things change...

Also on our stand will be the games challenge to end all games challenges. *Flashback* is the hippest Acorn game around at the moment, and you'll be able to come along and challenge the entire show by getting the highest score of the day and winning yourself a major prize. You never know, the editors might even have a go themselves, though there's no chance of them winning anything.

Games and competitions

The Games Arcade, which *Acorn User* is jointly sponsoring, will contain all the latest games – and some classic oldies but goldies – so why not go along and show your mates that you really *can* finish that last level of *Lemmings*. Just don't get carried away... once you've entered the Games Arcade, will you be able to tear yourself away?

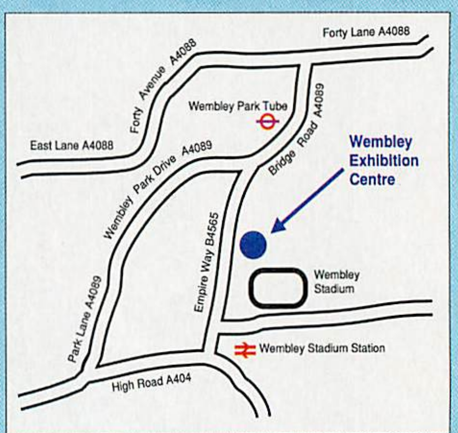
There's also a superb Pocket Book competition everyone can enter. You can get an entry form from the *Acorn User* stand, which contains a printout of a Pocket Book jigsaw. You have to wander round the show, trying to find which stands the pieces are on; if you complete the jigsaw, you enter a draw to win.

And don't forget the lucky dip, where you can pull all sorts of prizes out of the dip. Just don't fall in! Now, onto the stand-by-stand guide... see you at the show.

How to get there

London Underground: The exhibition is a five-minute walk from Wembley Park Station on the Metropolitan Line or a ten-minute walk from Wembley Central Station on the Bakerloo Line.

British Rail: Wembley Stadium station provides a service from Marylebone Station, London. To reach the hall itself, follow the local signs to Wembley.



Buying tickets

Adults: £5 advance, £6 on the door
Children: £4 advance, £5 on the door
Family: £16 advance, £20 on the door
Credit card hotline: (0933) 441448
Cheques to: Acorn Direct, 13 Denington Road, Northants NN8 2RLM

Theatre timetable

Times	Friday	Saturday	Sunday
11.00 – 11.25	Introducing the Risc PC	Introducing the Risc PC	Introducing the Risc PC
11.35 – 12.00	Set top boxes and the Information Highway	The best of both worlds	Photo retouching in the hands of a graphic artist
12.10 – 12.35	Digital video editing	Technology on the move – the Pocket Book in education	Home and school – providing the missing link
12.45 – 1.10	Talk to us – we talk to everyone	Photo retouching in the hands of a graphic artist	Armed for the future
1.20 – 1.45	Risc PC – the perfect sound	New Literacy – taking IT and education into the 21st century	What's new in multimedia?
1.55 – 2.20	Armed for the future	Set top boxes and the Information Highway	The best of both worlds
2.30 – 2.55	Technology on the move – the Pocket Book in education	What's new in multimedia?	Set-top boxes and the Information Highway
3.05 – 3.30	Photo retouching in the hands of a graphic artist	Talk to us – we talk to everyone	Meet the editors – *Acorn User*
3.40 – 4.05	The best of both worlds	Risc PC – the perfect sound	Technical question time
4.15 – 5.00	Technical question time	Meet the editors – *Acorn Computing*	**CLOSED**

Armed for the future: the development of the Arm family. Arm Ltd

Digital Video Editing: film making with your Acorn. Paul Middleton – Uniqueway

Home and school – providing the missing link: how computers at home can help parents to support the computers in their children's schools. Alastair Wells – Netherhall School

Introducing the Risc PC: the capabilities of the Acorn's latest machine. Peter Bondar – Acorn Computers

Meet the editors – *Acorn User*: using the Archimedes in the design and production of a professional magazine, with examples of what the Risc PC can produce. Mark Moxon and David Matthewman – *Acorn User*

Meet the editors – *Acorn Computing*: a workshop for those with technical questions. Steve Turnbull and Mike Cook – *Acorn Computing*

New Literacy – taking IT and education into the 21st century: The man who coined the phrase 'New Literacy' explains its importance to us all. Roger Broadie – Acorn Computers

Photo-retouching in the hands of a graphic artist: creating images from Photo CD using the latest packages. Stuart Watson – Chameleon Design

Risc PC – the perfect sound: how the Risc PC can now offer 16-bit, CD-quality sound. Andy Pierson – ESP

Technology on the move – the Pocket Book in education: how the Pocket Book is changing perceptions about IT, and how the Pocket Book II is set to bring further changes. Geoff Lambrechts – Lord Grey School

Set-top boxes and the Information Highway: the recent developments in interactive multimedia. Online Media

Talk to us – we talk to everyone: integrating Acorn machines into industry standard networks. Mark Phillips – Acorn Computers

The best of both worlds: the PC card for the Risc PC, which brings the 'education and industry standards' into one machine. Alex van Someren – Aleph One

What's new in multimedia?: all the latest developments in this area. Peter Stibbons – Anglia TV

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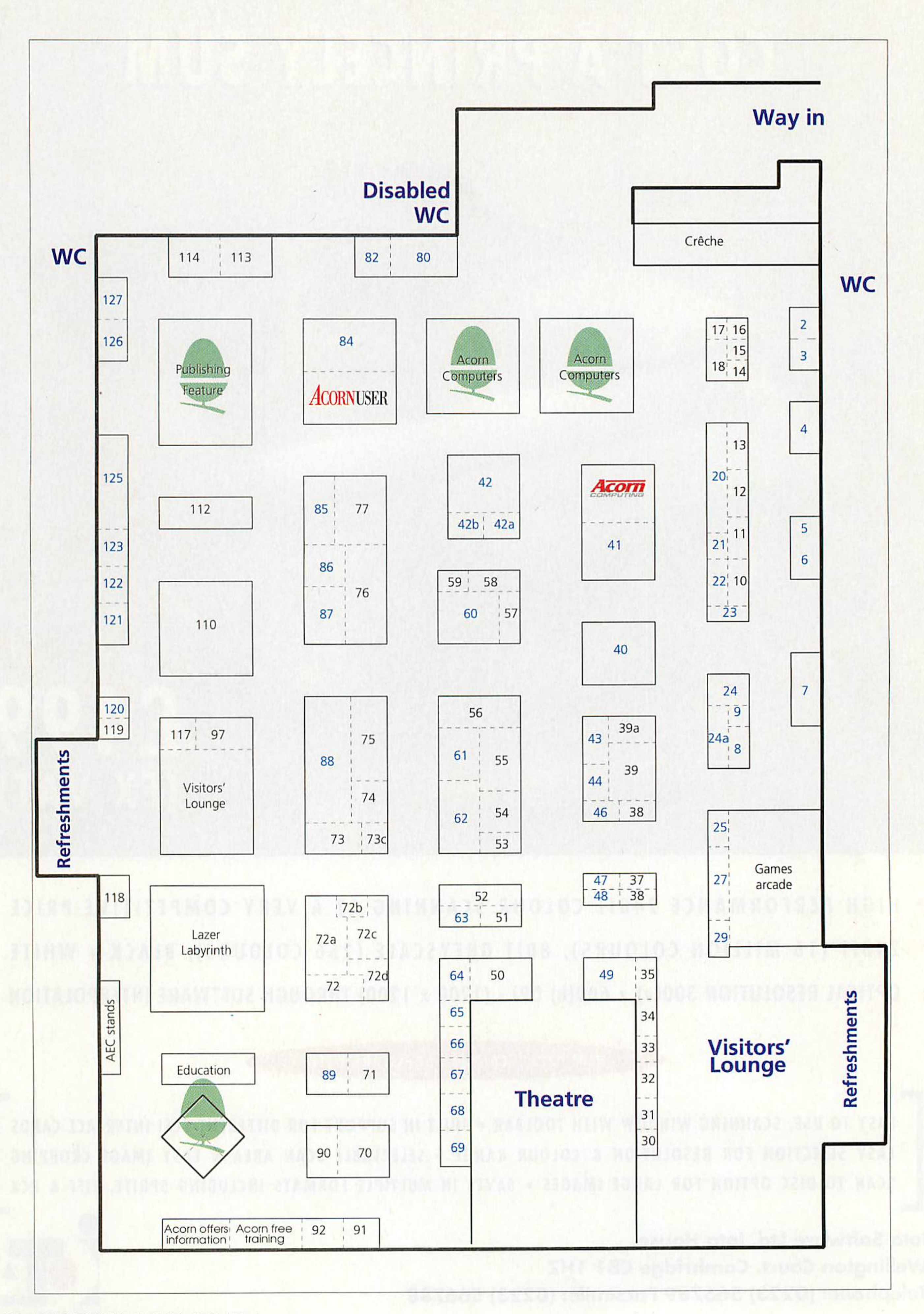
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Key to subjects

- DTP
- Graphics
- Education
- Business
- Games/Leisure
- Dealer
- Hardware
- Magazine
- Music

Acorn User

See map

Come and meet the team! Our stand will have special offers on magazine subscriptions and expert technical advice from our editors. We will also be showing how Acorn machines are used in the production and design of the magazine.

On the stand will be the *Acorn User* games challenge, where visitors to the show can pit their wits against each other in the US Gold games *Flashback* and *Scrabble*. Prizes will be awarded for the best score in a given time.

Acorn Computers

See map

Acorn's stand will be extremely busy, with an emphasis on power computing. Centre stage will be taken by a seven-slice Risc PC (yes, seven!) and a five-processor adaptor card for the Risc PC that allows up to five Arm processors to be fitted.

Also on the stand will be the PC Card for the Risc PC, and operating systems developments that will enable Risc OS, OS/2, Unix and TAOS to be run on one machine.

For comms enthusiasts, Acorn will hopefully be previewing a World Wide Web browser, and network supervisors will be able to see the latest in interface cards and technology. There's no doubt that the Acorn stand should not be missed.

4Mation

Stand 72

Along with educational favourites like *Flossy the Frog* and *Granny's Garden*, 4Mation will be showing its recently released interactive fiction software, which includes *Betsi* and *A House in Holland*. There will also be plenty of special prices for the show.

4th Dimension

Stand 24

The 4th Dimension will have a big new release – the biggest release of the year, according to the team – and the best special offer they've ever had to coincide.

The game is *E-Type 2*, and is billed as *the* cult game for the Risc PC. Split screen action for two players, tunnels, laser guns, lots of power ups and a built-in designer make this one to watch for fans of the original *E-Type*.

10 out of 10

Stand 24



The big new 10 out of 10 release is the *Driving Test* package. This is the first real software user's guide to driving, with over 4000 questions on (amongst other things) continental driving, trivia, motorsport, traffic signs, junctions and more. This is by far and away the biggest 10 out of 10 launch ever.

Also on show will be *Structured Spelling*, *Essential Maths* and *Maths Geometry*.

Academy TV

Stand 60

Academy TV will be displaying its range of CD-Roms including: *Science1: Elements*, *Science 2: Materials*, *Environment 1: Water*, *Environment 2: Land & Air*, *Inventors & Inventions*, *¡En Marcha!* and *Directions 2000*.

Acorn Computing

See map

Co-sponsors *Acorn Computing* will have a 'walk through Mike Cook' in which the author of the body-building series will demonstrate a number of unusual devices hooked up to Acorns, including a full-body joystick.

Aleph One

Stand 41

Aleph One will announce details of its PC second processor card for the Risc PC at the show, enabling Windows and DOS titles to be run on the Risc PC. The Aleph One cards will offer greater performance than the Acorn card at highly competitive prices.

Alsystems

Stand 75



Alsystems will be featuring the Power-tech range of equipment – IDE hard cards for the A3000 and A3010 – launching a SCSI driver for the NEC range of CD-Rom drives for A5000 and Risc PC, and selling a large selection of hard drives up to 2Gb in size.

It will also have Ram for the Risc PC at competitive prices, as well as stocks of the Risc PC, hopefully with the PC card.

Also on display will be the i-cubed range of Ethernet hardware, with experts on hand to answer your questions on networking.

Alternative Publishing

Stand 127



Come and see what all the rave reviews of *ImageFS* were about. Alternative Publishing will be displaying and demonstrating its recently-launched graphics import software, as well as its specialist Acorn DTP, bureau output and commercial print services.

Ant Ltd

Stand 41

Ant Ltd will be demonstrating its networking software and hardware range, including some exciting surprises. It will show how it is possible to connect Acorn computers to a range of Acorn, Microsoft and Unix systems. Ant's technical staff will be on hand to demonstrate the systems and help with technical problems.

Anglia TV

Stand 97

Anglia TV's CD-Rom range is about to be transformed by the inclusion of full screen video, using MPEG compression, on all future Anglia CD-Roms. Demonstrations will be on the Anglia stand.

New CD-Roms include *The World's Weather*, *Understanding Energy*, *Art Store: Looking at Animals*, *Garden Wildlife*, *Industrialisation of Britain (1750-1900)*. There will also be a collection of Key Plus datafiles, including the Ladakh geography datafile, ancient Egyptian times, and CD-Rom datafiles such as *Britain since 1930* and *World War II*.

Finally, there are new packs containing videos of educational TV programmes and the complete IT element. Packs include *Whether the Weather*, *Water Watch*, *Accident Zone*, *Time Travel*, *Animals in Action – Diversity* and *Animals in Action – Vision*.

Apricote Studios

Stand 47

Apricote will be showing off new versions of the popular accounts package *Prophet*, as well as the new *Personal Accounts* application.

Arch Angel

Stand 72c



Arch Angel will be selling PD packs. Collections promised include: a games mega-bundle, a graphics pack with 24-bit editing packages, utilities for the Risc PC and a general utility pack. Also on sale will be a *Draw* file puzzle utility pack.

The Arm Club

Stand 25

The Arm Club will be promoting membership and showing of the extensive Arm Club PD Library.

There will also be a number of new products on display, including *GameOn!*, which enables games to run on the Risc PC, and *Smart CD+* for playing audio CDs on your CD-Rom drive.

Aspex

Stand 37

Aspex will be showing *Architech*, the fast and powerful 3D modelling software for the Acorn (see review on page 48). *Architech*, just released, has an intuitive 3D editor which enables you to model anything from a cupboard to a whole kitchen, from an engine block to a block of flats. The program has texture mapping in an instant, and outputs animation in Ace film and *Replay* formats. A

special one-off deal will be available at the show – this is the closest that you'll get to virtual reality for the price.

Also available from Aspex are *Moonbase* and *Primary Classroom*, new environments for use with *Spex*.

Atomwide

Stand 41

Atomwide is a major Acorn dealer and developer of peripherals and upgrades for Acorn products.

A wide variety of interface cards, memory expansions and networking products will be demonstrated on the stand. Products will be available for sale at very special Show prices making the Atomwide stand an important stop for every visitor to Acorn World '94, for anything from memory to networking to Risc PC expansion.

Beebug

Stand 84



Beebug will have an impressive range of hardware and software on display. On the software side, there will be a version 2.0 of *Ovation* DTP, *Sleuth v2* OCR and *Easy C++*. Hardware will include the high-density floppy disc interface, a new range of low-priced tape streamers and a full range of networking products. It will also be selling subscriptions to *Risc User*.

Birdtech

Stand 64



Birdtech offers quality printing and scanning services, and is bringing a scanner to the Show. Showgoers will be able to scan in favourite photographs at a cost of 50p + a disc each. A new venture is *Replay* snippets on disc for £1 per disc, digitised for a number of recordings of events made by Birdtech on a camcorder.

Play on words, a new piece of education software which morphs words into pictures, will also be on sale.

Calligraph

Stand 27



If you're looking for the latest technology in laser printing, visit this stand. On show will be the A4–1200 and the TQ–1200, which are A4 and oversized A3 respectively.

Both printers print at 600dpi, enhanced to 1200dpi at up to 8 pages per minute. The A4–1200 can take light card, transparent film and envelopes, and even has an optional envelope cassette.

The professional TQ–1200, handles oversized A3 paper down to A6, has lots of top-end features like background printing, virtual sprites (an OPI equivalent), gamma correction, greyscale mapping and Epson emulation, all for under £5000.

Cambridgeshire Software House

Stand 43



Along with its quality range of educational products, like *Frontier 2000* and *Amazing Maths*, CSH will be showing two new programs. The first, *SecureIT*, protexts files and directories, and *Helix Compiler* is a development of the *Helix Basic* language.

Castle Technology

Stand 17



A new light pen, SCSI disc sharer and special prices on SCSI drives for all Acorn computers will be just some of the bargains to be found on Castle Technology's stand. There will also be deals on computer systems, keyboards and mice.

Clares

Stand 56

Clares' products cover a huge range of interests, from music software to graphics. On show will be the latest version of the graphics package *ProArtisan*, the 24-bit version *ProArt24*, and *Composition*, the photo montage application.

Also, if you're looking for a replacement mouse – and who isn't? – Clares makes the best replacement mouse around.

And apparently you should be looking out for musketeers on this stand... don't ask us, we don't understand either.

Colton Software

Stand 80

If integrated packages are your thing, then don't miss Colton Software's stand. The latest member of the Z-family, *Recordz*, will be on display, as well as *Fireworkz Pro*, the combination of *Wordz*, *Resultz* and *Recordz*.

Keep your eyes open for special show offers, too.

Computer Concepts

Stands 110/112



Computer Concepts has a plethora of new hardware and software for the show, for sale or demonstration.

On the hardware side, there is the TV tuner and Teletext card, the 24-bit Scanlight Professional, the MPEG board for the Risc PC and a new printer from Canon.

The new software on show comprises *Impression Publisher Plus*, new versions of the *TurboDrivers*, including network spoolers, and the improved equation editor *Formulix*.

Apparently those musketeers are appearing on this stand too... whatever that means.

Cumana

Stand 48



Cumana will be showing off its ever-widening range of CD-Roms, including the latest Risc PC models. It will be demonstrating some CD-Rom networking solutions, and will be on hand to advise about multimedia in education.

CD-Rom hardware has come down in price dramatically over the last year – look out for some bargains on the Cumana stall.

Cumana will also be selling the latest CD-Rom discs, for use in their drives.

Davyn Computers

Stand 13

Davyn Computers will have the author of its *RiscCAD Professional* program on hand to demonsrate its power and flexibility, and there will also be a number of games and utilities on display.

Dec Data

Stand 121



Dec Data has two new products to be released for the show. The first is aimed at education and is a double clip art collection called *The Normans*, including excerpts from the Bayeux tapestry. It is aimed at Key Stage 2.

The second product is an *Impression Publisher* resource disc, including a free copy of Dec Data's *Boxy* font which puts boxes round words. This is a completely new disc, rather than a re-packaged version of the *Style* resource disc.

Desktop Projects

Stand 86

In addition to its successful range of *TopicArt* clip art, and its *Quick* series of utility software, Desktop Projects will also be supplying the new Risc PC range of computers, low cost SCSI CD-Rom systems and IDE hard drives for the Risc PC and Archimedes at very attractive prices.

Digital Arts

Stand 85

Digital Arts will be selling *DA's Picture* at a special price to reflect the show. The photo retouching package will have two new filters available for it, one for texturisation and one for warping.

Digital Services

Stand 20

Digital's Level 5 fileserver will get its first airing at the show, as well as a CD-Rom server which can play multiple simultaneous Replay sessions.

Other products include *Armlock* for security; *Squirrel*, the acclaimed database; *Netgain* for speeding up your network; *Digistore* for backing up systems to tape; and *Waiter* for organising your discs.

Doggy Soft

Stand 73c

As well as the latest version of *Desktop Hacker*, Doggysoft will be selling a new comms package called *Termite*. As well as providing normal terminal emulations, *Termite* will be available in a version allowing connection to the Internet via a provider such as Demon.

Doggysoft will also be selling plug-in-and-play

Internet packages, which include a Demon subscription.

The Electronic Font Foundry

Stand 113

Fonts will be on display at the Electronic Font Foundry's stall, unsurprisingly. There will be some new joined fonts for Primary schools, and 'Publisher' fonts which come as a Risc OS 3 font and a Type 1 font. The Type 1 font will be downloadable to a PostScript printer, and is guaranteed to have the same encodings as the Risc OS 3 font.

Also on show will be a range of over 40 fonts, covering all the native alphabets of the former Soviet Union.

ExpLAN

Stand 118

ExpLAN will be launching two packages at the show: *Occasion*, a new multi-user networkable diary system and *HolyBible*, a multimedia, multi-version bible.

Fabis Computing

Stand 23

Fabis Computing will have on show the latest version of its font software – *Easyfont III*. This is an update on the popular font filing system which provides its own filing system for fonts, offering up to 40 per cent compaction. It allows fonts to be grouped, and will display examples of currently uninstalled fonts.

GamesWare

Stand 40

GamesWare will be displaying its complete range of games. On show will be *Wavelength*, a new space-age shoot-em-up, the *Aries* compilation and *Playdays*, a game for three to eight year olds based on the children's TV series.

GamesWare will also be showing work in progress for the new games *Striker*, *Dune 2*, and *Rome AD*.

Hazelnut Software

Stand 123

Hazelnut will be demonstrating two new educational packages, *The Times Table*, which takes the drudge out of learning tables and *Tell Time* which exploits the notion of 'delight in learning'.

HCCS

Stand 126

HCCS will have a selection of the best Autumn hardware releases on show and for sale, including Vision 24 video digitisers and low cost Ultimate CD-Rom drives

Icon Technology

Stand 117

Icon Technology will have a much revamped *Talking StartWrite*, a word processor which speaks words as they are typed and which has proved useful for pupils with learning difficulties. *Talking StartWrite* also has a useful facility whereby words can be selected from a list of possibilities.

TechWriter and *EasyWriter* have both been updated and now include OLE, a button bar and background printing.

IFEL

Stand 75

IFEL will be showing its usual extansive range of Ram upgrades for the entire Acorn range, including 8Mb upgrades for the Archimedes. Also on show will be Arm3 cards for a number of machines.

Integrex Systems

Stand 76

Integrex will be showing off various colour printing solutions and colour scanners, with experts on hand to answer technical questions. As well as the Integrex Colourjet range, Integrex hopes to have a new printer from Canon on show, and a range of other printers and scanners.

Iota Software

Stand 87

Iota will be releasing *The Complete Animator* – see our exclusive review on page 85.

There will also be a new, low-cost 24-bit flatbed colour scanner together with Iota's *Scanners* driver software, which is designed to be exceptionally easy to use and is expandable to support multiple scanners.

And as for the musketeers...

Irlam Instruments

Stand 90

The colour scanning experts will have a wide range of scanners on display at the show, from cheaper hand-scanners to the latest flatbed.

New from Irlam will be the 24i16, a card combining 24-bit video capture with 16-bit audio digitisation. Irlam will also have a scientific DPS and data acquisition card, which is an expandable system with plug-in modules.

KCS Premier

Stand 39a

KCS Premier will be selling a wide range of computer consumables, from inkjet refils to hard discs. Special show offers will include ready-formatted floppy discs and a 500Mb hard disc for £150.

Krisalis

Stand 7

Those of you wishing to play *Lemmings* and *Oh No! More Lemmings* on the Risc PC should visit this stand, where Krisalis hopes to be selling its innovative 'run in a window' versions of these games.

New from Krisalis at the show will be *Cannon Fodder* and – debugging permitting – a very welcome Archimedes version of *Sim City 2000*.

Lingenuity/Lindis

Stand 58

Among the goodies on the Lingenuity/Lindis stand are *CableNews II*, the presentation package; *Presenter GTi 16v*, for graphing; *Cadmust*, the educational and professional CAD application; and Polaroid LCD panels for multimedia and audio-visual use.

Longman Logotron

Stand 77

Longman Logotron will be demonstrating new and existing software packages for the educational and professional markets. New packages include *Eureka 3*, the spreadsheet, and *Revelation ImagePro 24-bit*, a new Risc PC version of the successful painting and image processing package.

Look Systems

Stand 125

Look Systems hopes to have the full range of over 600 Monotype fonts for sale. A special show deal is promised, with the fonts being sold in presentation packs, enabling you to collect the full set over a period of time.

Micro Aid

Stand 36

Micro Aid will be selling software and peripherals. Its range of professional software – family history, payroll, accounts and mailings packages – will be available, as will discs and assorted stationery products.

Millipede Electronic Graphics

Stand 4

Millipede hopes to be demonstrating its top-of-the-range genlock/overlay adaptor for the Acorn Risc PC. Called the AlphaLock, this piece of hardware offers excellent mixing control between the signal from the Risc PC and from an external source such as a video.

Minerva Software

Stand 57

Minerva will be launching two new products. *Map Importer* converts Ordnance Survey digital map data into *Draw* giving schools easy access to a wealth of information which is often available free.

PrimeMover is a real-time animator bringing a new level of accessibility to on-screen animation. Also look out for a sneak preview of the forthcoming all-new Risc OS version of *Ancestry*.

Neurotron Software

Stand 42a



Version 3 of Neurotron's series of optical character recognition packages will be

on sale at good discounts.

New products will include a powerful, yet low cost and easy-to-use database called *Multibase*. A useful desktop filing utility is also promised.

North West Semerc

Stand 18

New from Semerc are *Informatrix*, a super high resolution overlay keyboard based on the popular Concept Universal 2010 model; *Informax*, the latest in overlay designer software for Informatrix; and *Resound*, the powerful new sound digitiser for the Acorn platform.

Norwich Computer Services

Stand 49

Norwich Computer Services is this year concentrating on selling subscriptions for its magazine *Archive*. The Norwich team will be on hand to offer expert technical advice to all Archimedes users.

Oak Solutions

Stand 88

Apollonius is Oak Solutions' new parametric CAD package which, according the the advertising 'combines Olympian power with Spartan simplicity'. Find out for yourself on Oak's stand.

Also on display will be *Genesis*, the multimedia package, and *Rephorm*, the popular morphing application.

Oregan Software

Stand 52

Oregan will be releasing the latest version of *PhotoTouch* at the show, and also new versions of *Morpheus* and *Digital Symphony*.

It will also have three new games releases: *Sally and Wally* for younger players, *BurnOut*, a networkable car-racing game and *Arcturus*, a vector landscape game.

Pineapple Software

Stand 46

Pineapple's acclaimed painting package, *Studio24*, will be on show, with the talented artist and *Acorn User* favourite Walter Briggs demonstrating how he draws G'Kar and other pictures. The author of *Studio24* will also be available to explain some of the program's more esoteric features.

In addition, Pineapple will be selling the latest virus protection systems, and a new schools administration application.

Porters Primary Software

Stand 21

Porters Primary Software will be demonstrating a range of programs for primary schools, such as *Infant Windows*, *Junior Windows* and the primary collection.

Powerslave Software

Stand 35

Powerslave Software will be launching *Wolfenstein 3D* for the Archimedes. The game will be on sale for £30, and promises to be one of the main attractions for games buffs at the show.

Quantum Software

Stand 123

Quantum Software will be selling version 3.06 of its best-selling utility *Keystroke*, the 'macro making' application, at a special show discount price.

It will also be showing for the first time its long awaited *Blinds*, a sophisticated pinboard type program that enables you to define your own multiple windows.

Quill Marketing

Stand 5

Want to print your favourite Acorn design on a tee shirt? Well, Quill Marketing has the answer with the largest range of textile transfer papers in Europe. Now you can tell the whole world exactly what you think of Acorn...

Resource

Stand 53

Resource will be showing a new Risc PC system, especially configured for Special Needs students. Called Discovery 2000, the system includes *TalkWrite*, *EasiCalc* and *BigDesk* software, and comes in three configurations – a base pack, a CD-Rom pack and a pack with Touchwindow and overlay keyboard driver.

The Serial Port

Stand 59

The Serial Port promises a stand with 'lots of modems', and will be selling ready-set-up systems including the Public Domain *KA9Q* program. On display will be a new 3D graphics editor with the ability to import files from Silicon Graphics workstations. There will be Risc PC versions of *ArcTerm7* and the dual serial port card.

The more popular titles from David Pilling's range of software will also be on sale from this stand, including *ArcFax*, *SparkFS* and *Trace*.

Sherston Software

Stand 42

Leading educational specialist Sherston Software will have a number of new releases for the show: *Rosie and Jim* talking activity programs based on Central TV's series, *Voyage of Discovery* and *Look! Hear! Talking topics*. It will also be demonstrating its popular *Crystal Maze* game

Sibelius Software

Stand 27

Sibelius Software will be launching the new version 2.5 of *Sibelius* 6 and 7, which include not only Risc PC enhancements but also some highly sophisticated playback features, such as automatic interpretation of dynamics, tempo marks and other text in English, French and Italian.

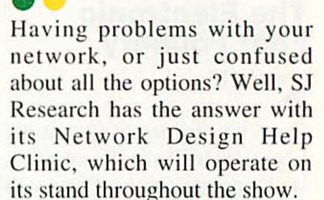
Simtec Electronics

Stand 22

Simtec will be showing some of its recent innovative designs, including the 2–4Mb upgrade for the A3010, its range of affordable 4–8Mb upgrades and, designed specifically for the Risc PC, *upgradeable* memory modules.

SJ Research

Stand 85



Having problems with your network, or just confused about all the options? Well, SJ Research has the answer with its Network Design Help Clinic, which will operate on its stand throughout the show.

Also present will be new developments in the networking world, like Nexus disc-less clusters and fast network printing using the Risc PC 486 card.

Snap Computers

Stand 29

Snap will have its full range of consumables and accessories at Acorn World, with all products at special show prices.

Spacetech

Stand 44

There will be a new version of the photo retouching package *PhotoDesk* on sale the Spacetech stand, at a special show price. New features include printing and scanning support.

Spacetech will also be showing its extensive range of weather satellite software, including *PDSView*.

Thomas Nelson & Sons

Stands 71/89

A range of CD-Rom titles for secondary schools will be on display at the Nelson Multimedia stand. Nelson has recently acquired the Interactive Learning Productions range, and has titles ranging from science to humanities.

Uniqueway

Stand 72d

Version II of *Empire*, the Acorn Replay movie editor, will be on show at the Uniqueway stand.

Uniqueway will also be launching a low cost SCSI CD-Rom for the Risc PC at £179 + VAT, and offering a CD-Rom cutting service.

Finally, Uniqueway will also be selling the *Risc Disc* CD-Rom, which aims to show off the capabilities of the Risc PC for £19.95 + VAT.



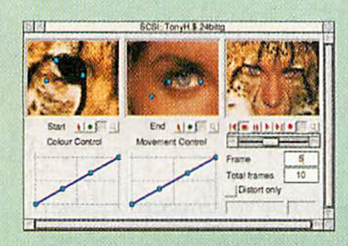
!Rephorm takes two sprites of any size and allows a morph to be generated between them. You simply identify a number of key control points on the start sprite and reposition them to similar places on the end sprite. Rephorm calculates so quickly that the effects of repositioning control points can be seen in real time as you drag them! All calculations are performed in the background so Rephorm never stops the machine from multitasking. The user interface has been widely acclaimed for both its simplicity and its versatility. The morph can be displayed on screen, saved to disc as either an Ace Film or an Acorn Replay file, or individual frames or groups of frames may be saved as sprites.

Since its launch last year, several extra features have been implemented. Chief among these is Object linking and embedding (OLE). Control-double-clicking on any sprite within Rephorm will automatically transfer it into !Paint (or another painting package) for editing. Saving the edited sprite from !Paint will instantly transfer the sprite back into Rephorm, which will then recalculate the effects of the change.

Rephorm has always supported the 16 and 32 bit sprite file formats for the new Risc PC, but a new utility, !UnClear, allows the now obsolete 'ClearFiles' to be converted into sprites for use with Rephorm. Another utility, !Splitter, will split a SpriteFile containing a number of sprites into individual sprites.

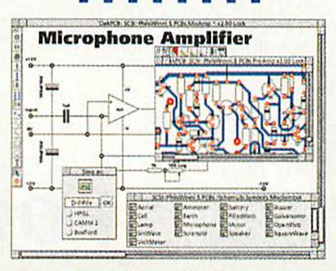
As well as being able to produce morphs and distortions of images, Rephorm can also produce video style special effects such as fades and wipes. These are useful for those people creating and editing Acorn Replay films, providing interesting ways to join two clips together.

Rephorm costs £50
Upgrades to version 1.04 £15



Rephorm

OakPCB II



Having enjoyed considerable success as both a stand alone application, and as part of Design Processor, OakPCB has recently undergone its first major revision to become OakPCB II.

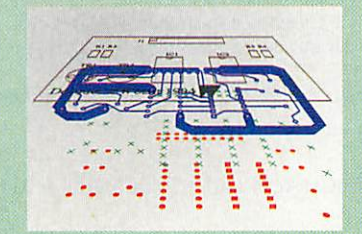
The changes made have been generated as a result of user feedback, and also to take advantage of the improvements which have been made to the operating system since the application was launched under RISC OS 2.

As ever, the user interface to OakPCB is based very closely on !Draw, and users familiar with that package will find no difficulty in getting to grips with the business of creating and editing both schematic diagrams and printed circuit board layouts. OakPCB can handle anything from simple single layer boards all the way up to 4 layer. Comprehensive (and extendable) libraries are provided for both PCB and schematic work.

By default, OakPCB aligns tracks in multiples of 45°, although this feature can now be turned off to allow tracks to be placed at any angle if required. Visual feedback is given whilst in this mode and when editing tracks, so that the tracks change colour when they are aligned at 45° intervals.

A new utility called PCBDrill is supplied which allows circuit boards to be drilled automatically on the Roland CAMM 2 and CAMM 3, and also on Boxford milling machines. Oak PCB II runs on all RISC OS computers including the new Risc PC. It outputs to Plotters and RISC OS printer drivers via Draw Print & Plot (supplied).

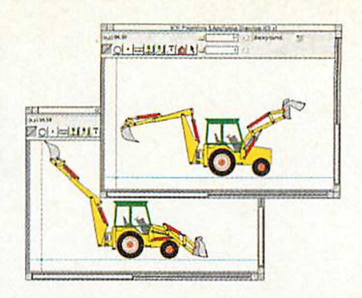
OakPCB II costs £70
Upgrades cost £35



OAK SOLUTIONS

Dial House Chapel Street
Halton Leeds LS15 7RN
Tel: 0532 326992Fax: 0532 326993

Prices shown include P&P but exclude VAT



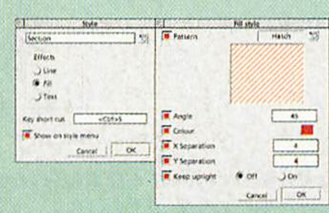
Apollonius PDT is a fully parametric 2D CAD environment. However the user interface differs considerably from conventional wisdom. Normally CAD packages are cluttered with an abundance of methods for drawing each type of object. For example the circle tool will have variants such as Centre/Circumference, Centre/Radius, Radius/Tangent to 2 objects, Three point etc. With Apollonius PDT there is only one Circle tool, but the interface is sufficiently intelligent to know what type of circle you are trying to build by which objects you click on. Indeed the number of options is larger than in most CAD packages.

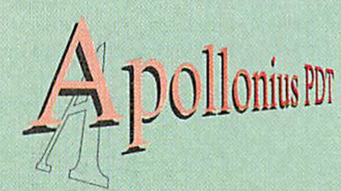
Other noticeable differences are the apparent lack of short line segments and arc tools. Both of these are instead replaced by an 'intelligent pencil' which allows the draughtsperson to draw round the relevant parts of construction lines in one quick operation.

Being parametric, the package allows the designer to answer 'what if' questions very rapidly. The whole drawing will be recalculated and redrawn as you change the positions or sizes of key objects, or even the geometrical relationships between them, by simply dragging any item around the screen.

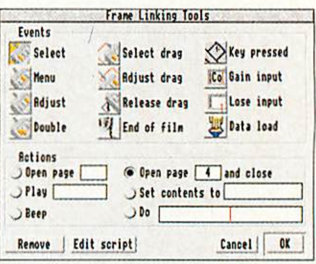
Altogether, Apollonius represents a radical new way of doing CAD. It makes it possible to create clear, flexible, accurate designs, with the minimum of training. The amateur user benefits from the amazing ease of use, while the professional benefits by its unrivalled parametric power.

Apollonius PDT costs £150
Upgrades from WorraCAD and Oak PDT £75





genesis



Genesis Professional and Project are the successors to Genesis II and Genesis Plus and feature greater power, speed, and ease of use. The Genesis menu structure has been simplified by using dialogue boxes to alter the style of frames and pages. Master pages can now be created and added to a library. Application creation and editing has been eased by the introduction of 'Object Linking and Embedding'.

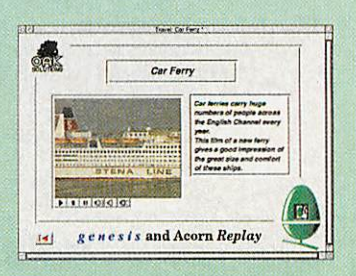
New data types have been incorporated into Genesis, which now supports Artworks, Replay, Windows .BMP and .WAV files. Predefined control buttons can be added to Euclid, Film, Replay and Sound frames. A 24 bit colour model is used throughout and Genesis can handle the new 15 and 24 bit Sprites. The speed at which Genesis pages load has also been increased significantly.

Genesis Professional provides support for Laservision players and for CD. Its powerful Script language has been extended with a host of new keywords and now supports global variables.

Genesis Project is a friendly multimedia authoring system which provides sufficient power to satisfy the everyday needs of most users. Applications authored using Genesis Project are, of course, fully compatible with Genesis Professional so that they can be used as the basis for more complex work. Genesis Project differs from Professional in two significant ways. There is no access to the script programming language, and the overall program structure is simplified with fewer menu options and a reduced range of linking tools. This makes Genesis Project less daunting to the novice user than its big brother, whilst allowing progression to Genesis Professional at a later date.

Upgrades are available from all previous versions of Genesis (including Learning Curve), telephone for details.

Genesis Professional costs £120
Genesis Project costs £50



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New Releases...



A new professional edition of the best selling Impression DTP program.

This version offers enhanced colour control (named and spot colours), EPS and OPI support for professional full colour DTP work.

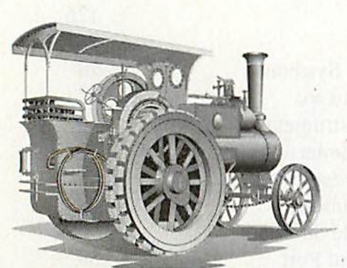


Publisher Plus

£299 + VAT (£351.32 inc)

Upgrade from Impression Publisher

£130 + VAT (£152.75 inc)

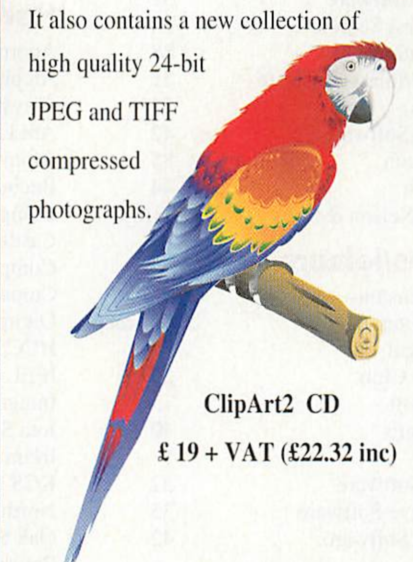




The results of the second ArtWorks clip-art competition. This CD includes over 500 new clip-art examples, plus all those included in the ArtWorks package.

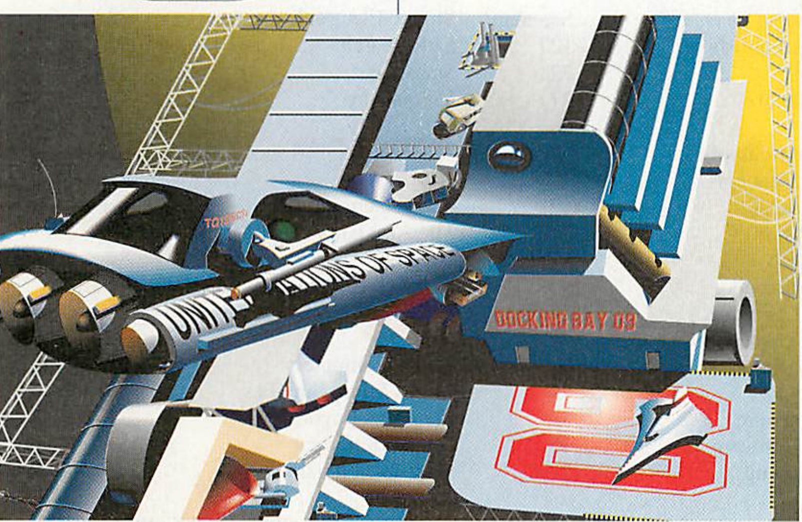


It also contains a new collection of high quality 24-bit JPEG and TIFF compressed photographs.



ClipArt2 CD

£ 19 + VAT (£22.32 inc)





This package includes a copy of the TurboDriver software and network spooler software allowing any machine connected to an AUN compatible network to print to a common printer. The software also supports LaserDirect printers and includes an unlimited network site licence.

Network Spooler

£149 + VAT (£175.07 inc)



A completely new mathematical and equation formulae editor. Outputs Drawfiles and is OLE compatible allowing it to integrate with suitable applications such as Impression Style and Publisher. Features include full undo, WYSIWYG display, matrices, drag and drop etc.



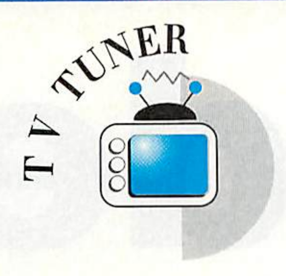
Formulix

£69 + VAT (£81.07 inc)

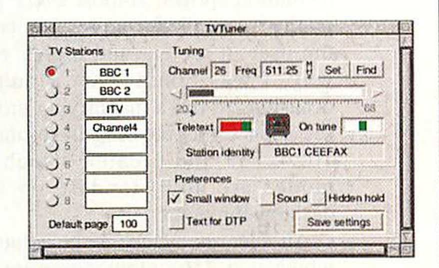
Upgrade for existing Equasor owners

£49 + VAT (£57.58)

...What's new from Computer Concepts this Autumn for Acorn RISC Computers



An expansion card consisting of a TV Tuner module that can output composite video signal (TV can be watched either on a separate monitor, or on your computer screen via a suitable video digitiser). Optional Teletext software allows Teletext page to be viewed on screen, and saved as text or sprites etc.



TV Tuner
£89 + £6 p&p + VAT
(£111.62 inc)
TV Tuner + Teletext Software

PRESSURE SENSITIVE GRAPHICS TABLETS

The brand new ArtPad graphics tablet from Wacom. A near A6 pressure sensitive tablet that offers over 2000dpi resolution, 256 levels of pressure and cordless pen. Can replace or work alongside the mouse. Compatible with all aplications including 'pressure' capable programs such as Photodesk & the Eesox ArtWorks Pressure Tool.

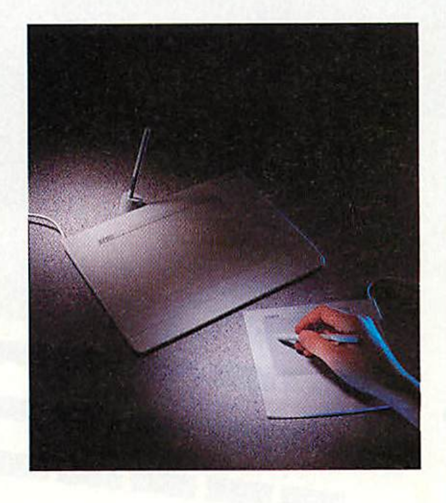
Wacom ArtPad
£TBA less than £200 + VAT
Wacom A5
£399.00 + VAT (£468.82 inc)
Wacom A4
£549 + VAT (£645.07 inc)



Amazing new expansion card for Risc PCs, allows full motion, full screen video with CD quality stereo sound, to be obtained from standard MPEG movie files. With a compatible CD player it can play VideoCDs to provide better than VHS quality video. Scart RGB video output to a suitable (ie PAL frequencies) monitor. An optional upgrade (available later) allows video in a window on a Risc PC as an alternative to video out.



Movie Magic
£249 + £6 p&p + VAT
(£299.62 inc)
Movie Magic Video in a window - available later £TBA





The latest version of the TurboDrivers supports Acorn !Access network software, is compatible with the Risc PC and the latest versions of !Printers.



Now offers better colour control and very significant performance gains over any alternative printer drivers - typically it's between two and ten times faster ! Versions available for all the popular inkjet printers.

Risc PC TurboDriver timings

- Acorn !Printers
- TurboDrivers

	Time to get control back	Time to complete print
Acorn !Printers	153s	424s
TurboDrivers	47s	105s

Please specify printer when ordering. Requires Risc OS 3.1or later.

TurboDriver Canon
£49 + VAT (£57.58 inc)
TurboDriver HP -
£49 + VAT (£57.58 inc)
TurboDriver Epson - includes support for Epson Stylus Colour - £49 + VAT (£57.58 inc)



Gaddesden Place, Hemel Hempstead, Herts, HP2 6EX Tel 01442 63933 Fax 01422 231632
Email info@cconcepts.co.uk

Modeli agency

Three dimensional graphics has been, for the past decade, the source for some of the most remarkable imagery to appear on TV and the big screen. Anything from flying logos to the incredible realisation of prehistoric creatures is all performed in 3D modelling and rendering packages.

Unfortunately, both the hardware and the software that is required to design, render and animate very complex scenes is beyond the pockets of most design studios, let alone the home computer user.

For some time I have been waiting for a knockout 3D modelling package for the Arc. Since the gradual evaporation of the Arxe Systems *PowerShade* project, nothing has really emerged.

Architech attempts to fill part of the gaping hole in 3D graphics software for the Arc. The program enables users to design objects and environments and to exploit their imaginative potential that has not been possible with previous software.

The system is not priced as a top-end product, and neither would it survive in a top-end environment, competing with the likes of *AutoCAD* and other big names.

The package

The manual and packaging are of the highest quality. The manual is an easy and worthwhile read, revealing in a succinct and crystal clear manner how to utilise some of the program's features.

The other facet of a program's front-end is only exposed once the program is running. The user interface is structured around two windows; one which can be likened to a 3D version of *Draw*, with all the construction tools, and a preview window which displays the scene as it would appear in (virtual) reality, that is in perspective and with lighting. This arrangement doesn't match the standard of the packaging but is more than satisfactory.

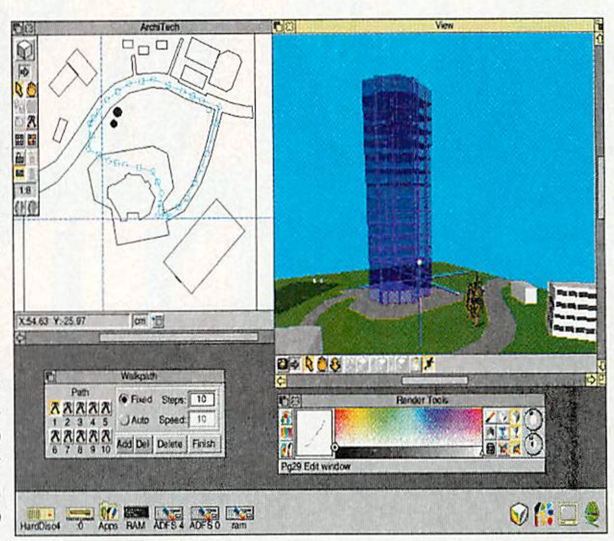
The only major flaw in the interface is the designicons. Only a few are high resolution sprites. Almost every program on the Acorn platform presents its tools to the user in a clear and highly resolved way. I was tempted on a number of occasions to run a magnifying program to see what I was pressing in resolutions of 1024x768 and greater – such screen modes are now standard on all new desktop computers.

Another annoyance is the colour picker which is a 256 colour representation of something that even 24-bit graphics systems have trouble doing – it's basically a pixellated cocktail of colours.

I can see an obvious reason for this downside. This program has been designed to be used by everyone. The software is compatible with every machine in the Acorn range and even works on 1Mb Risc OS 2 units.

ng

Jack Kreindler looks at Architech, the long-awaited 3D modelling package from Aspex



Designing the block of flats: the blue line on the plan view is a walkpath

Nevertheless, for anyone who has an A5000 with a colourcard or a Risc PC, this program may disappoint as a result of its universal compatibility.

The speed of the previewing is all important in the designing and refining of 3D models. In this respect, the program does not disappoint in resolutions ranging from 320x256 to 800x600.

As a test I built a sphere with a huge 10,000 facets and texture mapped it with a stone map. On a Risc PC, the program managed to generate about a frame each second, viewing the sphere in true perspective and with lighting. This was just about the limit, but was very impressive all the same. There are two ways of designing 3D models in *Architech*. The first is to use the predefined tools objects such as cube, sphere, extrude and sweep, with less geometrically primitive structures being designed and exported from *Draw*.

Depending on their colour value, objects including text in *Draw* can be given varying degrees of extrusion and you can choose if objects are transparent or opaque.

Building bricks

The building bricks tools are very easy to use as the program automatically flips between front and side views as you construct the face and then adjust the thickness of a cuboid, for instance. The preview window will simultaneously visualise your construction work, lighting it and texture mapping it if you so choose.

The rendering window has three main functions. The first two are for colour selection, RGB sliders and an HSV system, and the third is for applying characteristics to the surfaces and objects.

These characteristics include textures which can be designed or scanned and loaded into the program, deciding whether the object is transparent or not – though it can still be coloured like glass – and there are also options for masking objects by making them invisible and changing the way that light affects them with contrast and brightness controls.

Though it is a little difficult to select facets and objects in 3D environments and given the fact that the program does delay when selecting objects, designing your 3D creations is essentially an easy process.

The full screen preview mode is up to three times faster in rendering the scene than the desktop preview mode, and the way in which you can toggle in and out of the desktop without hassle is a convenient way of surveying your work.

On the subject of previewing, the program does seem to have a problem with hidden line removal. Sometimes the inside edges of boxes and the like peer through the front surface, and background bits and bobs occasionally spring out of nowhere in a benign kind of way.

This is perfectly bearable for walkthroughs and previews but if you wish to save a shot into a vector graphics program, then I'm afraid you could be left with a great many manual alterations in *Draw*.

Changing scenes

There is a wealth of options for automating your scenes once they have been designed. There are comprehensive controls for generating orbits, spins and tumbles, and as with all the animation features they are easy to achieve and well explained in the manual.

Doors, for example, can be set to rotate through an arbitrary number of degrees on appropriate hinge points, all graphically definable – no maths required. Spinning planets can be set to orbit round a sun, which can then spin round other centres. Hierarchical animation is also featured.

Paths are the other major animation feature. Paths can not only be applied to objects like fish in tanks but also to cameras. They can be drawn in two dimensions and then altered in all three. With simple control over what you would like to be viewed at any given moment during the 'walkthrough', cinematographic skills can also be put to advantage.

I would like to see the ability to define paths that can be travelled along using mouse controls, which would guide and restrict manually controlled previews, so people with little experience in mouse control could walk down streets without accidentally tearing through ten storeys of multi-storey car park or whatever.

As far as exporting goes, *Architech* can generate animation files like Replay, can output to *Draw* and can print nets for cutting out and building your virtual creations in reality.

In addition to all this, *Architech* can be used to create *Spex* environments in an optional number of viewing angles.

A nice feature in *Architech* is the ability to define whether objects exported as *Spex* files should obey certain rules like sticking to the floor and not letting anything be placed on top the object, when manipulating the scene in *Spex*.

Conclusion

To conclude, *Architech* is a great package for the price. However, it is a sad state of affairs that this program has to stand as currently the best 3D modelling program on the platform. Many games on the PC – such as *Doom* – use techniques which put shame to any program on the Arc, *Architech* included.

Aspex says that work is nearing completion on a number of areas with faster algorithms andmore advanced tools. Hiden fcaet removal has now apparently been cured, and work is under way to improve the icons and the colour picker.

Output to rendering programs and 24-bit compatibility are promised soon, and powerful magnitude range is also a priority; according to Aspex, you will soon be able to start from an orbital view of Earth and zoom in to a vase on a desk.

With free upgrades for the forseeable future, it seems that the program is soaring to great heights while its price is staying firmly on the ground floor.

Product details

Product: Architech
Supplier: Aspex Software
Tel: (0822) 611060
Fax: (0822) 611091
Price: £169 + VAT
(£495 + VAT site licence)

Showroom open Mon-Sat 10-18.00 hrs (All prices exclude VAT)

CD-ROM

All the following CD-ROM drives are Toshiba units and are PhotoCD compatible (multi-session) and include a driver for CDFS =>2.20

Internal Drives (RiscPC only)

Item	Price
XM-4401B Tray 300ms, 300kb/s	£200
XM-3401B Caddy 200ms, 330kb/s	£250
XM-3501B Caddy 200ms, 600kb/s	£375

The above do not include SCSI interface, see below.

External Drives (for all machines)

Item	Price
XM-4401B Tray 300ms, 300kb/s	£275
XM-3401B Caddy 200ms, 330kb/s	£325
XM-3501B Caddy 200ms, 600kb/s	£450

The above do not include SCSI interface, see below.

SCSI cards

Item	Price
Morley uncached SCSI card	£130
Morley cached SCSI card	£175
Cumana SCSI II card	£200

The above cards are suitable for A300, A400, A3000 (Ext), A540, A5000 and RiscPC. For others see MultiPodules.

Hard Discs

A5000/RiscPC 2nd Internal Drive

Item	Price
210Mb IDE 14ms Cache (~1Mb/s)	£159
420Mb IDE 14ms Cache (~1.5Mb/s)	£259
540Mb IDE 12ms Cache (~1.5Mb/s)	£399

The above include all cables, screws and instructions. All the above drives are Connor as used in the RiscPC

A300/A400 Series Internal (IDE)

Item	Price
210Mb 14ms Cache (~1Mb/s)	£239
420Mb 14ms Cache (~1.5Mb/s)	£339
540Mb 12ms Cache (~1.5Mb/s)	£479

The above include all cables, screws and instructions. Add £79 for ext case and/or £15 for A3000 podule case. **All the above drives are Connor as used in the RiscPC**

Syquest Drives

Item	Price
IDE 105Mb Internal for A5000/RiscPC	£259
(Above Includes one cartridge, cables & driver software)	
SCSI 105Mb External for all Machines	£349
(Above Includes one cartridge, exclude SCSI card)	
105Mb Syquest Cartridges	£55

TopicArt

Single disc clipart containing approx. 50 high quality draw format clip art images, each on a single subject. Comes with mono reference sheet. 12 subjects are available now. Please specify when ordering. Site licences are £16+VAT per disc, please ring for further details.




TopicArt9 - Dinosaurs

Subjects available
1 - General
2 - Transport
3 - Costumes
4 - Entertainment
5 - Bugs 2 Slugs
6 - Road Signs
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8 - Sports Figures
9 - Dinosaurs
10 - Symbols
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£8 + VAT per disc

TopicArt catalogue now available. £1.50 Inc VAT & p+p (cheques only)

Buy 4 TopicArt discs get one free
not incl SpecialArt

TopicArt12 - AnimalsGB



TopicArt4 Entertainment

SpecialArt (Xmas or Signs) £20+VAT (each)

Special editions of TopicArt consisting of a minimum of 4 discs full of clipart





QuickTile v1.02 £25+VAT



Up until now it has only been possible to print posters from Draw & Sprite files. Now with QuickTile you can create posters from ANY RISCOS application, including Impression. Simply enter the size of poster required & select PRINT from the application! QuickTile does the rest, printing each tile with crop marks and tile references. RiscPC compatible.
Requires RISCOS 3.10 or later.
Return Disc with SAE for upgrade.
Upgrade from Tiler for £15+VAT.

DIY Ink Jet Refills

Item	Price
Single Refills (req an orig cartr.)	£7
Twin Refills (Black only)	£12
125ml / 400ml Cleaning Kit	£4 / £10

Available in Black, Cyan, Magenta, Yellow, Red, Green, Blue, Brown

Please specify colour(s) required when ordering. These do-it-yourself refills can be used with any printer where the head and ink reservoir are combined, ie, DJ-500, BJ10/200. Please do not send empty cartridges. Please note that colour quality may not be 100% from a black cartridge refilled with another colour. We cannot guarantee against dried up empty cartridges and/or blocked nozzles.

QuickSound £10

Load, play, convert & resave Armadeus, Tracker and raw data sound samples. Apply special effects including Reverse, Echo, Max Vol, alter replay rate and resample frequency. Convert samples into modules for use with the RISCOS sound system. Create stand alone Utility mod's.

QuickShow £25

Slide show presentation and video titling package. Create sequences of frames containing text of any colour with drop shadows, outline shadows and rubout boxes using the RISCOS fonts. Sprites can also be included in frames, positioned and resized as necessary. Screens can be linked together with the sequencer with fades in and out.

Hardware, Software & Books (All prices exclude VAT) See us at Acorn World '94 Stand 86



All RiscPC's include 1yr on-site maintenance. 0% and low finance avail. We operate Acorn Assist for teachers & academics. **RiscPC prices are for purhases made by cash, cheque, Delta or Switch.** We now have many RiscPC systems in stock for immediate delivery.

Item	Price
RiscPC 2MHD210 — 2Mb DRAM, 210Mb HD, AKF60 Monitor	£1199
RiscPC 5MHD210 — 4Mb/1Mb D/VRAM, 210Mb HD, AKF60 Mon.	£1299
RiscPC 9MHD420 — 8Mb/1Mb D/VRAM, 420Mb HD, AKF60 Mon.	£1599

Add £400 to above for 17" AKF85 Monitor

RiscPC Upgrades

Item	Price
4Mb Simm RAM	£120
8Mb Simm RAM	£220
16Mb Simm RAM	£425
32Mb Simm RAM	£POA
1Mb VRAM (Acorn)	£129
2Mb VRAM (other)	£169
1 to 2Mb VRAM Upgrade (exchange)	£99
486 PC Upgrade (available ~Oct 94)	£99
MS-DOS 6.2 & Windows 3.11	£99
2nd Slice Case Upgrade	£99
Acorn Access for RiscPC	£119
Ethernet Interface Card	£99

A Series Computers

Item	Price
A3010 Action Pack 1Mb RAM	£319
A3010 Action Pack 2Mb RAM	£339
A3010 Learning Curve with AKF30/40	£599
All A3010 include Lotus Turbo Challenge II	
A3020 2MFD/AKF52 MultiScan System	£699
A3020 2MHD60/AKF52 MultiScan Sys	£849
A4000 2MHD105/AKF52 MultiScan Sys	£879
Add £55 for AKF50 Monitor (not A3010)	

Software Packs

Learning Curve £42
Includes Acorn Advance & PC Emulator & demos of Applications & Games

Home Office £85
Includes EasiWriter2, DataPower, PipeDream4, PC Emulator & demos

The above software packs are ONLY available with any of the above computers except the A3010.

Portable Computers

Item	Price
Acorn Pocket Book (256k)	£169
Pocket Book II (256k)	£229
Pocket Book II (512k)	£279
Psion 3a (512k)	£249
A-Link (requires RiscOS 3.1)	£42
PC Link (for IBM PC compatibles)	£60
Parallel Link for Pocket B'k or Psion 3/3a	£26
P Book/Psion 3/3a Mains Adaptor	£15
128k RAM SSD	£43
256k Flash SSD	£47
512k Flash SSD	£77
A4 Portable 4MHD60 with PC Emulator	£1599
A4 Spare Battery (Including carriage)	£55

Remember, Carriage is free on most items

Monitors

Item	Price
Acorn AKF52 14" 0.39dp MultiScan	£250
Acorn AKF50 14" 0.28dp MultiScan	£310
Acorn AKF60 14" 0.28dp MultiScan	£325
Acorn AKF85 17" 0.28dp MultiScan	£649

Hardware Upgrades

Item	Price
486sx25MHz Bare PC Card	£357
486SLC50MHz Bare PC Card	£434
486sx25MHz PC Card 4Mb RAM	£495
486SLC50MHz PC Card 4Mb RAM	£570
For other PC memory see RiscPC RAM	
ARM3 (25MHz, Inc FPA socket)	£129
ColourCard Gold (CC)	£235
Joystick Interface (all m/c's)	£28
Midi Expansion Card	£69
Mouse (Acorn)	£25
Parallel Sound Sampler	£41
Powerpad (dual) (Gamesware)	£33
Scart - 15pin Monitor/RGBTV cable	£12
Serial Upgrade for A3000 (Acorn)	£19
Stereo Speakers (mains powered)	£36
Sportster 14,400 Fax/Modem (Inc Cbl)	£169
User/Midi upgrade (A3000/A4000 ser.)	£46

RAM Upgrades

Item	Price
A3000 1-2Mb	£55
A3000 2-4Mb	£90
A3000 1-4Mb	£129
A3010 1-2Mb	£45
A3010 2-4Mb	£105
A3010 1-4Mb	£145
A3020/A4000 2-4Mb	£89
A5000 2-4Mb	£89
A5000 8Mb	£259
A400 RAM	£45 per Mb
A300-A400 8Mb RAM	£249

Hard Discs/MultiPods

Item	Price
A3010 HCCS Hard Disc Multi-Podule	
20Mb + User Port + 2 Slots	£209
80Mb + User Port + 2 Slots	£295
120Mb + User Port + 2 Slots	£399
SCSI Archimedes Internal (Incl SCSI card)	
290Mb 15ms Cache	£340
345Mb 15ms Cache	£Call
A3000 Internal IDE Hardcards	
20Mb + User Port	£159
80Mb + User Port	£229
120Mb + User Port	£349

See also top of page for other hard discs and Syquest Removable Drives

Scanners/Digitisers

Item	Price
ScanLight Video 256 A5000/RiscPC	£199
ScanLight Video 256 A3000-A4000	£205
Vision24 Colour Digitiser	Int £99/Ext £112
Hi-Vision24 Digitiser A5000	Int £149/Ext £165

RiscOS 3.1 Upgrades

Item	Price
A300/A440 Series (inc carrier board)	£97.88
A400/1, A3000, A540 Series (In stock)	£75.75
Bulk Pack of ten upgrades	£339.00

Please add £4 (Inc VAT) carriage to RiscOS

Printers (Include Cable)

Item	Price
Canon BJ-10sx	£145
Canon BJ-10 Sheet Feeder	£50
Canon BJ-200	£220
Canon BJ-230	£280
Canon BJC-600	£399
Canon BJC-800 Turbo	£1150
HP LaserJet 4L 4ppm (300dpi)	£480
HP LaserJet 4P 4ppm (600dpi)	£599

Add £40 to above printers for TurboDriver

Printer Consumables

Item	Price
BJ-10 Ink Cartridge (BC-01)	£18
BJ-200 Ink Cartridge (BC-02)	£19
BJ-300 Ink Cartridge (BJI-642)	£17
BJ-600 Black Cartridge (BJI-201)	£8
BJ-600 Colour Cartridge (BJI-201)	£9
BJ-800 Black Cartridge (BJI-643)	£18
BJ-800 Colour Cartridge (BJI-643)	£21
DeskJet500 Mono/Colour Cartridge	£23/£24
EP-L Toner (LBP-4/HP LJIII)	£59
EP-S Toner (LBP-8)	£79
HP 92274A Toner (HP LJ4L)	£59
Swift24 Mono/Colour Ribbon	£7/£15

Books (No VAT)

Item	Price
Acorn RISCOS3 PRM's	£99.00
Add £7 (Inc VAT) carriage for PRM's	
Acorn BBC Basic VI Guide	£19.95
Acorn AASM Manual	£25.00
Acorn ANSI C v4 Manual	£25.00
ArtWorks Made Easy (Dabs)	£14.95
Begin's Guide to WIMP Prog	£12.95
DTP on the Archimedes (Sigma)	£12.95
First steps in prog RiscOS (Sigma)	£14.95
Game Maker's Manual (Sigma)	£14.95
Mastering 1st Word+ (Dabs)	£13.95
RiscOS 3 First Steps (Dabs)	£14.95

Add £2 Carr to above (£4 for Acorn books)

Terms

EC residents add 17.5% VAT to all prices except books. Carriage free in UK (excluding remote areas) (except books), elsewhere at cost. Orders MUST be accompanied by a phone number. Prices and spec's subject to change without notification. Goods subject to availability. Goods not offered on trial basis. Restocking fee on non-faulty returns. Official orders welcome from educational establishents, chq with order under £30.

Where to Find Us



Application Software

Item	Price
Advance (Acorn)	£95
Advantage (Longman)	£46
Almanac3 (Stallion)	£64
ArcFax (David Pilling)	£28
ArcTerm7 (Serial Port)	£58
ArtWorks (CC)	£125
AudioWorks (CC)	£45
Chameleon 2 (4Mation)	£33
Compression (CC)	£34
DataPower (IOTA)	£123
Desktop C v4 (Acorn)	£178
Desktop Thesaurus (Beebug)	£19
Digital Symphony (Oregan)	£39
Eureka v2 (Longman)	£93
FireWorkz (Colton)	£95
Font FX (DataStore)	£10
Hard Disc Companion (Beebug)	£45
Hatchback (4Mation)	£32
Home Accounts (Minerva)	£28
Illusionist (Clares)	£41
Image Animator (IOTA)	£46
Image Outliner (IOTA)	£46
Impression Publisher (CC)	£135
Impression Publisher Plus (CC)	£289
Impression Style (CC)	£85
MacFS (CC)	£85
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PlayBack (Beebug)	£17
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Render Bender v2 (Clares)	£41
Rephorm (Oak)	£47
Resultz (Colton)	£75
Rhapsody (Clares)	v2 £44 / v3 £75
S-Base2 Personal (Longman) **(Offer)**	£99
Serenade (Clares)	£84
ShapeFX (Datastore)	£10
Sleuth (Beebug)	£41
Snippet (4Mation)	£32
Squirrel 2 Database (Dig Ser)	£120
Superior Speech!	£19
Touch Type (IOTA)	£38
TurboDrivers BJ, HP or Epson (CC)	£42 each
Tween (Ace)	£28
TypeStudio (Beebug)	£43
Vector (4Mation)	£75
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Item	Price
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Axis (TBA Software)	£19
BattleChess (Krisalis)	£13
Birds of War (4D) 2Mb	£24
Black Angel (4D)	£24
Blood Sport (Matt Black)	£12
Break 147 & Superpool (4D)	£24
Cannon Fodder (Krisalis)	£TBA
Carnage Inc (4D)	£18

Games Software (Contd)

Item	Price
Champions (Krisalis)	£13
-Includes Man Utd, J Khan Squash, -Wld Class Leaderbrd & Boxing Mngr	
Chocks 2 Compendium (4D)	£24
Chopper Force (4D)	£24
Chuck Rock (Krisalis)	£19
The Crystal Maze (Sherston)	£28
Cyber Chess (4D)	£24
Cygnus Collection	£20
- Incl Twin World, Iron Lord & Tower of Babel	
Demon's Lair (4D)	£18
Diggers (Millenium)	£22
Dungeon (4D) 2Mb	£24
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Granny's Garden (4Mation)	£23
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Haunted House (4D) 2Mb	£18
Heimdall (Krisalis) 2Mb	£13
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James Pond (Krisalis)	£19
James Pond 2 RoboCod (G/W)	£20
Krisalis Collection	£21
-Includes, Mad Prof, Pipe'm, Terr'x & Revel'n	
K.V. (High Risc)	£12
Lemmings (Krisalis)	£19
Lemmings 2 Tribes (Kris) 2Mb	£21
Lotus Turbo Chall 2 (Krisalis)	£19
Magic Pockets (Renegade)	£20
Magnetoids (Oregan)	£22
Noddy's Playtime (J/Bean) 2Mb	£20
Oh No More Lemmings (Kris)	£16
Omar Sharif's Bridge (Krisalis)	£21
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Quark (Oregan)	£19
Real McCoy 2/3/4 (4D)	£24 ea.
Repton 3 / 4 (Superior)	£19 ea.
Saloon Cars Deluxe (4D)	£24
Scrabble (US Gold)	£22
Sensible Soccer (Renegade)	£20
Sim City (Krisalis)	£22
Simon the Sorcerer (G/W) 2Mb	£31
Small (Virgo)	£19
Speedball 2 (Krisalis)	£20
Spheres of Chaos (Matt Black)	£19
Stunt Racer 2000 (4D)	£24
Stunt Racer 2000 Xtra Tracks (4D)	£17
SWIV (Krisalis)	£10
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- Early Essentials (<7yr), English (6-16yrs), - French (8-16yrs), Junior Essentials (5-11yrs) - Maths (Number) (6-16yrs), Maths (Algebra) - (6-16yrs), Maths (Statistics) (6-16yrs), - Spelling (<9yrs)	
10/10 Dinosaurs (all ages)	£10
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NOV 94

GAME SHOW

Blimey, it's show time again and everybody seems to be gearing up for the releases at Acorn '94 this October.

Now I won't say too much about this, but as games go it looks like some very interesting developments are afoot for us all! Meanwhile, I've been gearing up for some new carpets and the odd piece of hi-fi and computer equipment that didn't survive last month's flood (and yes, I am going to keep going on about it; how would you feel if your front room doubled as a swimming pool?!).

Anyway, nothing brings out the press releases more than a show or two, so here goes. The most interesting information is from TBA software who, after a small rest at the end of last year, is looking forward to a show re-launch with no less than 17 titles. TBA is keen to point out that any outstanding customers will be dealt with either at the show or direct on (0761) 47003.

First off is *Formula Two Thousand* which is a racing game (you don't say) and is set in space. You must race around a cylindrical track in three dimensional mayhem, while your hosts Bob and Ted look on. Next is *Acceptable Rate of Loss* which appears to be a simulator of a futurustic Stealth device and sees you, the pilot, saving the galaxy.

Cyber Ape is a cutesy platform offering with four worlds and 40 levels to guide your character through, and only a banana to defend yourself with.

Yet more software is destined for a show release, including *Warp Riders*, a bike racing game, and *The Deep*, a moody and, err, 'deep' graphic adventure.

Not that software is the only thing on TBA's minds, as it looks like the rather one-horse corner of the market – joysticks – is about to be shaken. The joysticks listed below will now be retailing at the following prices:

The Speedpad: eight button, auto-fire joypad, £14.99
The LogiPad: eight button, auto-fire with index finger controls (like the Super Nintendo joypads) and fully microswitched, £24.99
The ProPad: As above, but no microswitches, £19.99
The Phantom: Top of the range with adjustable auto-fire, table-top arcade-quality with all breakers micro-switched, £29.99

All of the above come with drivers and can be bought in twin packs or any combination you can think of!

Also of considerable interest for the Acorn World Show will be the release of *Game On!* which has been developed by The Arm Club. It is targeted at those élite who own a Risc PC and seem to be suffering from compatibility problems, not only in games but for music applications and the like.

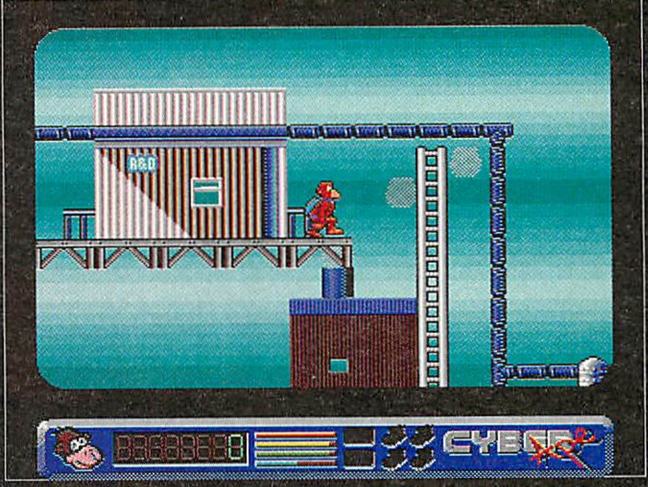
Using a simple-to-use graphic interface, the user can call up titles and initiate trouble-free running. Games such as *Chuck Rock*, *Saloon Cars Deluxe*, *Chocks Away*, *Gods*, *Lemmings* and *SWIV* can now be resurrected, as can the music packages *Tracker*, *Coconizer* and *Digital Symphony*.

The user simply drags the icon to the appropriate window and all the options are set automatically. A database of settings and compatabilities is thus set up – nothing could be simpler.

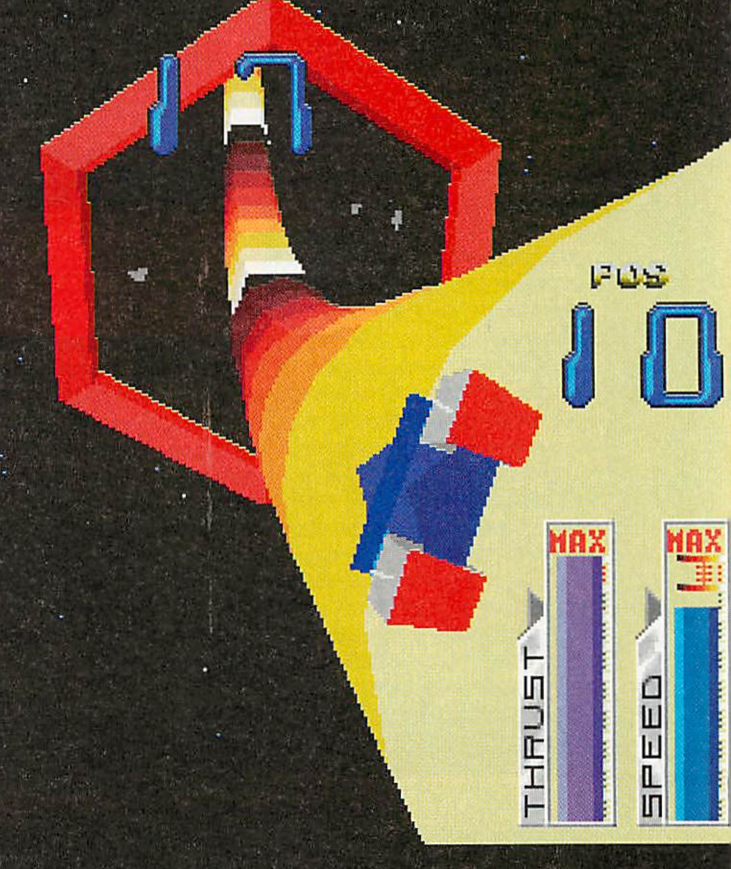
Already the list is too huge to mention here and at the time of writing is still expanding! I look forward to seeing this work at the show as it may well dispel any worries potential new owners might be going through: there's nothing more stressful than buying a new machine to find it hates all your favourite games.

Once again space has beaten me! See you next month with possibly a guest reviewer or two? Keep those reviews coming! If you missed any details of this amazing chance see last month's issue.

Steve Atherton



If you want to know how to defend yourself with a banana, get *Cyber Ape*





SPOBBLE

Supplier: Cybernation Entertainment Systems
Tel: 091-230 0000
Price: £24.95

I shall start this review with a big apology to Cybernation, as they no doubt think I am an ignorant youth for not including their game in the review section after they sent me such a nice letter asking me to do so.

Well, I do have an excuse, and it involves about 16000 gallons of prime Derbyshire water that survived the journey from the reservoir only to miss the tap and enter my house via the ceiling. To say the place is still in a state would be an understatement. It's times like these you badly need more fellow reviewers – see last month's opportunity.

With the apologies out of the way let's take a long hard look at Cybernation's first independent offering, *Spobbleoid*. The name alone is a challenge, not something for just before 'last orders', and the box boasts further mayhem with six zones and over 36 stages to negotiate. There is also some 1.7Mb's worth of graphics, 280K of sampled sound and A3010 joystick compatibility.

The game is classed as an arcade/puzzle game and all the action is set against the clock. At first this seems a simple task but later on, with locks, monsters and switches to manipulate, it all gets a bit out of hand.

Cybernation is a new company on the scene and if the press release is anything to go by then its heart is in the right place. The intention is to provide 'high quality games of a standard as near to that on other formats as possible' and the team seems miffed that little or no use is made of the Acorn's powerful capabilities by other games developers. I must say I agree as most games tend to live up to 8-bit expectations or, in the case of conversions, offer little more than the Amiga version.

The development team consists of Mike Carter, who is responsible for marketing, and Graeme Richardson, responsible for code. Graeme has developed for those plucky chaps at Superior Software and 4th Dimension and has seen through the releases of *Nevryon*, *Enter the Realm* and *Technodream*.

Amyway, back to the game. Remember Gerry Anderson? He's produced some impressive creatures and characters in his time, but there was one programme he did called *Terrahawks*. Unfortunately it was a load of old rubbish, but the rolling spheres that were used as security droids were terrific.

Take one of these, pop him into a computer game and you have a *Spobbleoid* – oh, first paint him yellow. Taking your new sphere into the outside world means tackling each of the zones, all of which must be completed.

Each zone has a password, so you can forget sneaking

LIVES
Your lives are displayed here. You start with three and end the game with none.

SCORE
At first it will be a shoe size, later attempts and practice should make it more respectable.

UNMOVEABLE BLOCK
These can't be moved and sap precious time if bumped into. So don't do it, OK?

LOCKED BLOCK
Find the corresponding coloured key to unlock the block; if you want to move a block like this it must first be unlocked. The yellow key will do it.

KEY
Pick up this and place it in a yellow locked block. Once unlocked you can use the block to great effect.

UNMOVEABLE BLOCKS
These blocks also won't be going anywhere or doing you any favours.



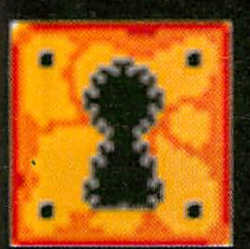
KEY
Place this, like the yellow key, in the corresponding coloured block to unlock and move a block.

THE TIME METER
If you haven't collected all the sweets, hoops, fruit or any other weird objects by the time it has run out, then it's time to loose a life.

MOBILE BLOCK
These blocks are quite mobile and can be used to kill or squash the baddies, or be moved out of the way to get at the sweets and bonuses







through without the necessary skills. The first zone for example is called 'The Woods of Flub' and involves guiding your sphere between two trees in an area much like a pinball table. The screen scrolls up and down as you move around, trying desperately to collect all the strawberries and cherries that are littered around the playing area.

In the meantime the clock ticks merrily away and a bar at the bottom of the screen gives a good indication of the time left. When all the time has run out an alarm clock appears and your happy circular friend loses yet another life.

So much for the first and easiest part of the game. Things soon start to hot up, though, with the fruit being hidden within or surrounded by blocks of stone. To move these you must sidle up to them and shoulder them out of the way. The blocks then shift out of the way pretty damn quickly – something which comes in handy a bit later on when all roaming monsters must be crushed.

Moving blocks may sound easy, and is, but moving the wrong ones in the wrong order can mean covering or trapping a piece of fruit, or even worse trapping yourself. This means you need to think quickly, as getting it wrong means the level is useless, time runs out and once again you lose a life.

Not that things stop there. The cunning programmer has managed to include some really nasty blocks to figure out. For instance, some are locked while others appear to be immobile until a correct sequence of coloured switches is pressed.

Not only that, but there are even plugs and omni-directional devices, not to mention some that only open for a limited time! Bonuses include free lives, extra time clocks, immortality moments and extra speed ups which are hidden by the blocks or set in them so you really have to have your wits about you.

To sum up, this is a good game and deserves the two pages I have given it. It's certainly addictive but more importantly it also gives you the impression that you can succeed.

Perhaps the only gripe is the fact that the character must be lined up very accurately with the gaps to pop in and grab objects hidden there. This can slow you down. The joystick capabilities do mean a more accurate control and this pretty well solves the problem.

Due for release about the time you read this is a designer program that allows you to create your own masterpieces for friends to explore and conquer. Also available about the same time will be *Spobbleoid Fantasy* which adds another 36 levels to the overall challenge. The price is just £19.95 with the original game and you get a £5 voucher inside. I'm impressed and look forward to the next offering!

Steve Atherton



GYRINUS II

Supplier: Tom Cooper
Address: 29 Woodland Ravine, Scarborough, N. Yorks, England
Price: On Request

This game has been available for a few months now and I have finally got hold of a copy after a friend recommended I should consider it for review.

A quick run through the read-me and doom rears its ugly head. First it's PD. Second it's a platform variant. Third and finally there is a cute character that plays the lead figure. I must say all these add up to a game I would not normally enjoy.

As luck would have it, long hours in front of my utilities and serious programs left me in a state of mind where nothing might be more enjoyable than a few hours of mindless fun (with a cute character).

You play a minute odd professor-type who looks likea combination of James Pond and Beaker from the Muppets. His task is simple – collect all the flashing crystals then proceed to a flashing door where the next level is revealed after a swift piece of transportation.

It would appear the programmer got a bit carried away with all this platform mayhem as two versions of the game can be accessed.

For those of you with a glorious two meg then all the samples and effects will be made available – one meg owners get a slightly reduced effect.

On entering the game you are placed in a rather nasty position at the edge of a sheer drop. Moving through the landscape gives you an idea of the perils ahead. Little electrodes and some interesting platforms spell the way towards the difficult settings.

One of three doors may be entered, each with a clear sign above corresponding to the three levels of the challenge. On picking 'Easy,' bouncing coke cans, huge Amiga demo-like balls and some odd mushrooms can damage your few lives.

Not that situations are always so negative. Squares can be hit to reveal some added power ups that can help you get rid of the creatures. Falling off the edge also hurts the character.

The weapons you can pick up all have their uses and it doesn't take long to figure out what weapon does what to what. There are guns, tomatoes, custard pies, a scroll and a bug spray. I should point out that some weapons appear completely useless.

It's not only the weapons and flashing crystals that contain prizes, not by any means. In addition, there are many blocks clearly marked with question marks.

If you stand underneath and jump up Mario style, a number of bonus points reveal themselves. Collect these and the points add up to some justifiable rewards!

This game is quite fast and some great little features have been added. If the character jumps into the air then he falls at a different rate to his spectacles. Landing however soon settles them back onto his nose. The character is also quite easy to control which is essential to games such as this where precise jumping and movement may be needed.

Not a great subject to attempt, but I would guess that originality was not the idea here. As platform games go this is very good indeed and being PD makes this a winner for me. Get a copy if you can!

Steve Atherton



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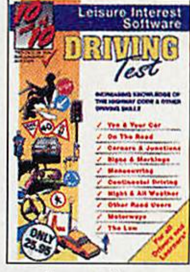
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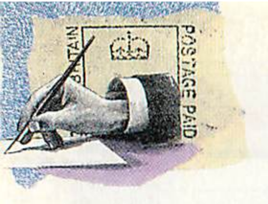
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Standard fare

I would like to add some points to Geoff Preston's reply to the letter from George Szászvári in the July issue.

Firstly, everyone accepts that there is an enormous installed base of PC kit in the world.

However, many forget that most of these machines are based on the IBM AT (now ISA) architecture which was launched ten years ago.

This was basically a 16-bit version of the original 1981 PC. Worse still, MS-DOS was not rewritten to take advantage of the additional address lines of the 80286 CPU: compatibility won.

The entire system therefore struggles around the original 1Mb address limit of the 8086.

The folks at Microsoft, Intel, IBM and so on are not fools, but are battling against the inertia of this existing base.

Windows NT, Windows 4 and the Power PC show that change is in the air, but NT has not been the success Microsoft hoped for, and Windows 4 has not yet been released.

Both require major software change to reap the benefits of 32-bits – bang goes any kind of compatibility.

Secondly, George talks about the Power PC as a possible future standard platform. I agree that this is likely, but using which operating system?

Although both are supposed to conform to the Open Systems architecture, manufacturers tend to develop supersets of these standards and smart programmers use the extensions to enhance programs. While programs may be identical initially, I will be surprised if this lasts long.

Windows emulators have been written for the Apple; they are slow because of all the code conversion. Native software is needed to make these platforms practical – another blow to compatibility.

Thirdly, while MS-DOS machines vastly outnumber any other, an enormous amount of work is done using more powerful machines (e.g. Unix and mainframe systems).

IT education needs to consider these as well as those of future years.

George's letter actually confuses education and training. Education teaches basic concepts whereas training is job specific. A student educated in IT in general can be trained in a specific field, while one only trained in one area has much greater difficulty in changing.

Working within a limited budget, the correct choice is the one which gives the most power for the money.

Fourthly, many people overlook the fact that a computer today is a tool used to do a job of work.

This tool comprises the hardware, the operating system and the application program(s), and the correct one is the one which gives the best overall performance for the money.

Unfortunately, only a few people have the chance to compare systems in the same environment.

We are a tiny graphics operation with a 486DX33 PC running *CorelDraw!* and *Harvard Graphics*, and a 25MHz A5000 running *ArtWorks*.

No contest – the PC stands idle most of the time except when we need a scan. We find the A5000 about twice as fast as the PC and far easier to use.

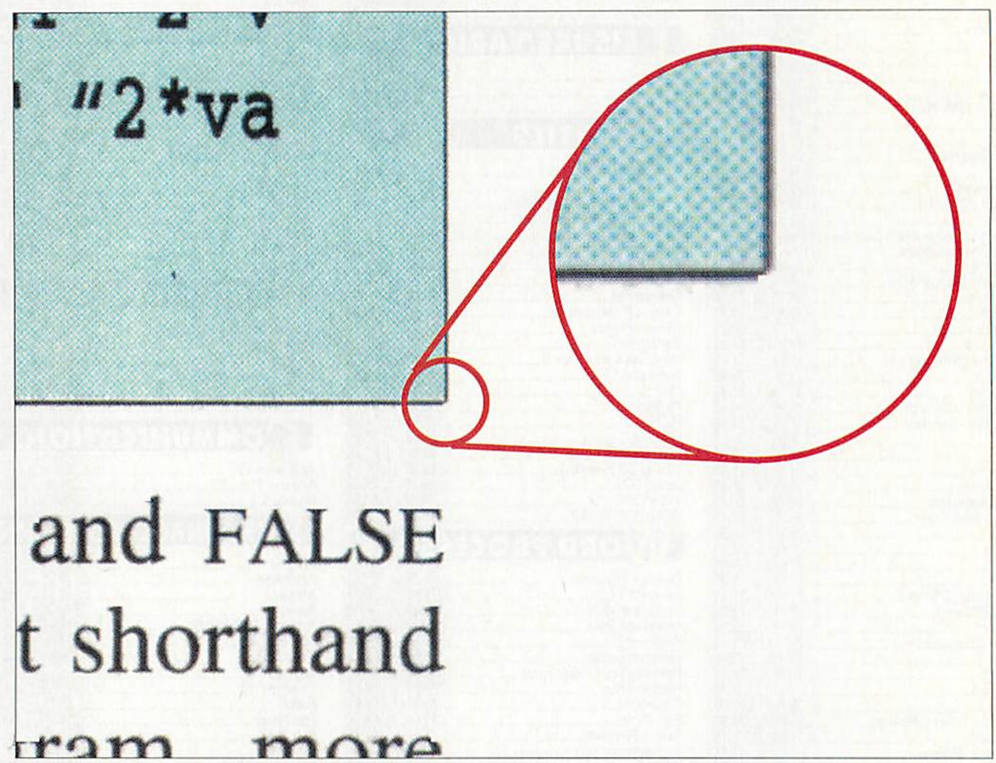
Also, most importantly, although *ArtWorks* sometimes crashes the A5000, this is less frequent than a crash on the PC with *Corel*. Recovery on the A5000 is easier than on the PC.

As non-expert users we can only say that the Acorn Risc system seems to be a sounder base for long-term planning than the current PC standard.

Peter Huddlestone
South Africa

See Viewpoint.

Spot the box



Take a look at this join: *Impression* doesn't quite manage the joins as well as *Quark*

Recently there has been an excess of letters regarding the fact that *Acorn User* is now produced on the Macintosh, so I felt compelled to write as I have to disagree with the point that Simon Smith made about nobody noticing this change.

Although *Impression* is excellent, it doesn't draw frames as rectangles, which means that a frame is four unconnected lines.

Therefore if you were to look very closely at any issue of *Acorn User* from January 1994 and compared it to any 1993 issue, there would appear to be a small difference.

Acorn User was an excellent example of what can be achieved using the Acorn, but now that the Macintosh is used, what difference does it make?

The only limitation to the power of your Acorn is the power of your imagination!

David Bradforth
Romford

I'll tell you what difference it makes: stress.

***Quark* may be the industry standard, but from a totally independent viewpoint (honestly!) I would stick to *Impression*, even for any extremely complex magazine layout.**

And when *Publisher Plus* hits the market, I'm going to find it even harder to stick to the Mac platform...

Goodbye games?

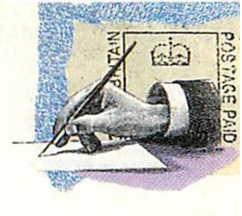
There has been an increasing amount of speculation recently about the new Risc PC, its imminent PC card and the allegedly dangerous potential of the dual processor open bus.

People have been saying that this marks the end of Risc OS applications, Risc OS software houses and the friendly Acorn 'community' as people will only use the Risc PC as just another PC clone.

I am sure this will not happen, at least not on a large scale.

This is because, contrary to popular belief, superb Risc OS applications *do* exist, and most of them are nothing short of a dream in terms of ease of use and, especially, speed.

An example of this is *Impression Publisher* which really can stand up to the likes of *Aldus Pagemaker* and *Quark*



XPress. Yes, *Quark* may be better when you come down to the more professionally-needed facilities, but most people do not need them.

If they do, they certainly don't battle away with it using the already horrifically slow Windows on a 25MHz 486.

Also, major PC programs rarely represent good value for money when compared to Risc OS products.

The only Risc OS products I can see going down the pan are games. Let's face it, 'home grown' Acorn games are often of a decidedly dodgy quality.

It also represents the end of conversions for Risc OS – who wants a grotty Amiga conversion when the PC versions are often superior? And who wants to wait 18 months?

Finally, I think it is important to echo the views of numerous other people. Acorn *must not* linger on rapidly ageing 486 technology. The Power PC is on its way, so why not jump on the bandwagon while it's just starting to move?

Matt Browne
Potters Bar

As reported in The Moxon Interview last month, Aleph One will be developing a Power PC card for the Risc PC when the PC card is out of the way. Until then, the 'rapidly ageing' 486 is still the most popular Windows platform, and until Pentium prices tumble it will continue to be so.

Just because the 486 is slow compared to an Arm600, that's no reason to think it's obsolete...

Out of place

I am reading *Acorn User* late this month and was interested in the 'Printing firms and their Acorns' article, as I am a printer.

I was very annoyed to see that you had put Dartford in London and not in Kent, at the head of the section about Bross Supplies Ltd; and as I know Roy and Gary, I think they won't be too pleased either!

But I am pleased to see that the Arc is spreading around in the print world.

I use an A5000 for all accounting, word processing and DTP work; in fact I have used an Acorn in my business since 1984, updating gradually from the BBC to the A5000.

At least two other printers in this area are using Arcs: Darprint of Dartford and Birchris of Swanley (both in Kent!).

Bryan Clarke
Dartford, Kent

What can I say? I humbly apologise for daring to tarnish Dartford with the London brush; it's just that compared to Macclesfield, Dartford is pretty damn close to the capital...

Business relationship

Your recent issue on Business users is a little optimistic, especially where databases are concerned.

None of the databases currently available for the Acorn platform have real relational abilities when compared to the options you have available on other platforms; all are basically flatfile database systems.

DataPower seems the most used, yet as far as I know this has no real indexing system or relational capabilities, and when I last evaluated it for my use I found the control panel far too large.

Its layout capabilities are fine, and the drag-drop abilities are very useful, but if I want to hot-link two datafiles together, nothing of such a kind exists for me to do so.

Of course, you can say that *S-Base 2* is more suitable, but it's hardly 'drag and drop' when it comes to creating simple databases, and it's far too complex and time intensive for people who really want to manipulate data, and not write reams of code and design templates.

I wish someone would commission a database from one of the larger companies that includes relational abilities and simple button-activated macros (not *S-Base* code), and where I could drag and drop a link between windows to create a hot-link on a field.

We don't need something huge and cumbersome like *Paradox for Windows*, but just a few of the usual facilities we have for other systems.

Steven Abrahart
New Malden

This is certainly a good point. All too often the 'official' reply to the question of which database you should use is a case of '*Squirrel* or *DataPower* for ease of use and good features, and *S-Base* if you want real power and flexibility'. But what if you want an easy-to-use relational database?

Now that's a very good question.

Drop us a line at Acorn User, Europress Publications Ltd, Europa House, Adlington Park, Macclesfield SK10 4NP

Viewpoint

Although my interest and loyalties lie with the Acorn platform – as is hopefully obvious from the replies to letters in this magazine – I am endlessly fascinated with the Macintosh platform.

I'm not sure why, though. Perhaps it's because the Mac is the most popular system used in my job, journalism. Perhaps it's because the Power Mac is now the biggest-selling Risc-based machine in the world.

Perhaps it's because Apple popularised the Wimp environment, which is the key to using computers quickly and efficiently.

Perhaps it is all of these. On the other hand, I think I know why I am so fascinated by the Macintosh: it's the machine's image. Macs are perceived as being so damn *sexy*.

For example, I was watching an interview with someone vaguely famous, and there he was leaning back on his chair in front of a Macintosh, and I found myself thinking 'Wow! This guy must be really creative.'

If he'd been sitting in front of a PC, I'd have thought he was boring, and if it had been an Acorn I'd have slammed in a video tape and stored the moment for posterity.

So the Mac is sexy. But there's one big problem: trying to use the thing. This is where my experience of Acorns gets in the way.

System 7 is a very poor substitute for Risc OS, and after being able to drag and drop a text file into a frame in *Impression*, I'm faced with an apology of a system in the shape of Apple's file load dialogue box.

Then there are features, or a lack of them, which I simply can't believe. Take *Quark XPress*, for example. Everyone is unanimous in declaring *XPress* the world-leading DTP package for magazine layout, but you can't even position guide frames accurately.

All you can do is drag guide rulers around, and drop them in the right place, but if you haven't dropped them accurately enough, you can't type in the measurements yourself. And guide frames need to be *exact*: that's what they're for.

So, I'm feeling a little let down. Apple has a sexy advertising campaign, machines which look good enough to eat, an enviable reputation in the creative side of computing, but the machine itself really turns me off.

If only Acorn machines had more sex appeal, life would be so much rosier.

Mark Moxon

Sample wares

In the first of a two-part article, Richard Garrett looks at the theory behind sound sampling

Sampled sounds are everywhere. A technology that started out as a dance musician's toy for recycling the voice of James Brown has spread through the worlds of CD recording, TV and computer games, to a point where even cars and domestic appliances address us in 'life-like' digital sound. Before long, you won't even be able to have breakfast without the toaster saying 'good morning'.

Until recently, high quality sampling was too expensive for most home computer users, but with the rise of multimedia and the fall of component costs, the practice of sticking microphones into machines and grabbing snippets of sound from the real world (copyright Peter Gabriel) is becoming increasingly common.

What with all the gubbins now available for the Arc (Eagle M2 multimedia cards, Vertical Twist and Oak samplers and so on), it seems like a good idea to discuss what sampling is and how to do it. In this, the first of two articles, I'm going to talk about the theory of sound and sound sampling.

Sound

Sounds are vibrations in air. Whenever a string is plucked, a drum beaten or the proverbial tree falls in the woods, air molecules around it are set into motion and rapid changes in air pressure (sound waves) occur and dissipate into the surrounding environment.

When these waves fall on human ears, a system of 30,000 small hairs converts them into nerve impulses which we perceive as sound.

Sounds containing regular oscillations, like those produced by stretched strings, vibrating reeds or hyperactive refrigerators, are said to have 'pitch'.

While musicians describe pitch in terms like 'middle C' and 'top F sharp', it is more useful for us to follow the practice of physicists and engineers and define the pitch of a vibration as the number of times it repeats itself each second ('frequency').

Human beings are said to hear frequencies between 20 and 20,000 vibrations per second (20Hz to 20kHz).

Analogue vs digital

Every sound you hear from CD, a tape recorder, or that funny little speaker in your computer, originated in one of two ways: by electronic synthesis or by sound vibrations falling onto a transducer.

A transducer is a device like a microphone or pickup which produces electrical signals whose voltages rise and fall with the intensity of the air pressure that hits it.

In conventional sound recording, this 'analogue' signal is stored on magnetic tape and can be played back through an amplifier to a loudspeaker which recreates the original sound in air (see Figure 1a).

One of the main characteristics of an analogue signal (loudness in sound, brightness or colour in light and so on) is that, at any given moment, it can have any one of near-infinite number of intensity levels (loudness, brightness).

Sound can occur at any loudness level between the thresholds of hearing and pain and there is a near-infinite range of colours between the reddest red and the deepest blue.

Computers can't cope with this. So, just as a black and white scanner takes continuous variations in brightness from a picture and reduces them to 16 or 256 grey-levels, a sound sampler takes an analogue audio signal and, by the same process, called 'quantization', reduces this near infinite variation to a finite number of discrete levels.

When an audio signal is fed into a sampler, a device called an ADC or 'analogue to digital converter' measures its intensity many thousands of times per second and turns each measurement into a binary number or 'sample'.

These are stored in memory or on disc. When the sound is replayed, the samples are sent to another device called a DAC or 'digital to analogue converter' which, not surprisingly, converts digital information back into audio.

This reconstituted sound can then be

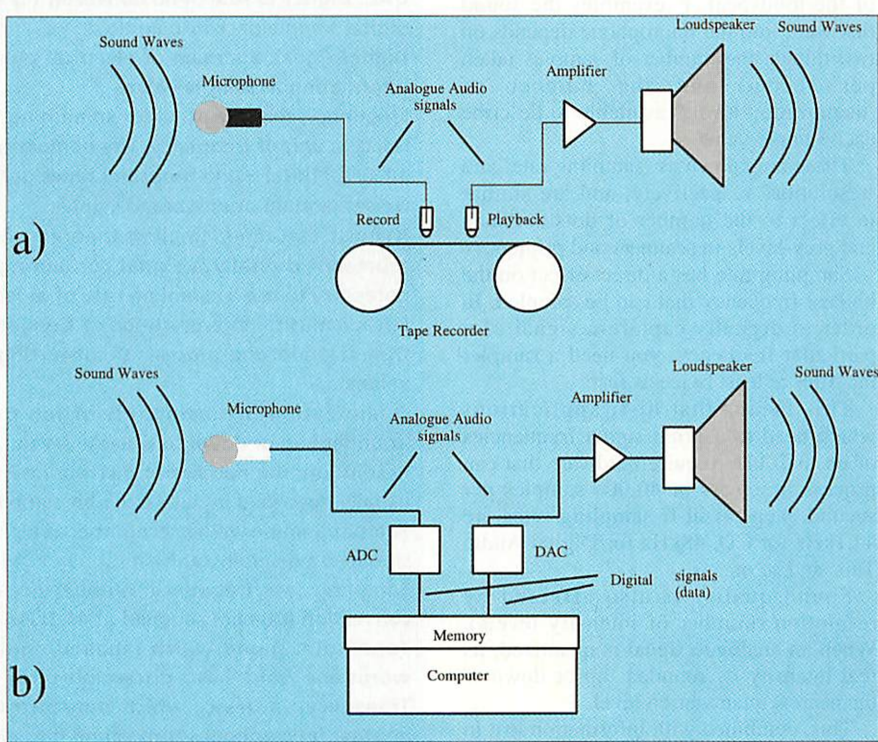


Figure 1: comparing digital sampling with an analogue tape recorder

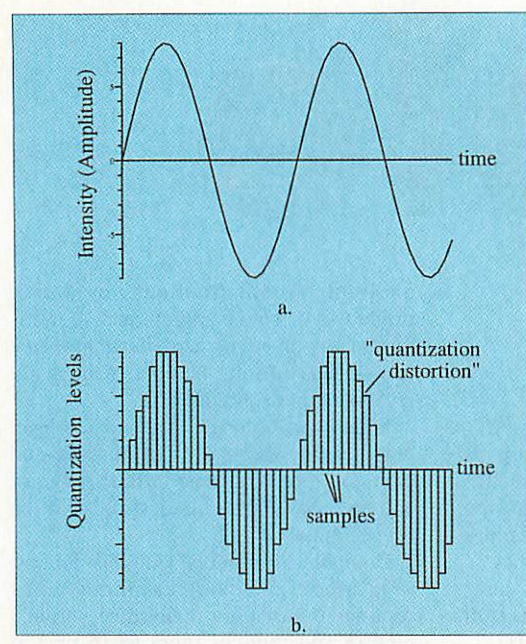


Figure 2: Quantization. When a continuously changing audio signal (a) is sampled, the sampler converts it into a number of discrete samples (b). For any given sample, the intensity is rounded up or down to the nearest 'quantization' level, causing a loss of imformation that appears in the final sound as 'quantization distortion'.

heard via amplifier and speakers, just as in the tape recorder (see Figure 1b).

In some ways, sampling is like making cine films. Just as a cine camera captures a rapid sequence of still images and a projector plays them back at speed to give the illusion of movement, so the ADC takes thousands of momentary 'snapshots' of a sound and the DAC 'projects' them in quick succession to reproduce a facsimile of the original sound.

How closely the sound that comes out of the loudspeaker resembles the sound that went into the microphone depends on two things: the number of samples taken per second and the number of 'quantization levels' available to describe each sample value.

These are known as 'sampling rate' and 'resolution' respectively, and are similar in effect to the number of dots per inch and grey-levels in scanners and printers.

Sampling rate has a direct effect on the highest frequency that can be sampled. In order to digitally capture a signal of a particular frequency, you need a sampler that runs at least twice as fast.

This means that hi-fi applications which need to capture signal frequencies of up to 20kHz require hardware that can process in excess of 40,000 samples per second. Typical hi-fi sampling rates are 44.1kHz for CD, 48kHz for Digital Audio Tape and so on.

Sound quality is also affected by resolution (number of intensity levels). When an analogue signal is quantized, its real intensity is 'rounded' up or down to the nearest quantization level.

This, combined with information lost in the short time between samples, produces an effect called 'quantisation distortion'. Displayed graphically, this appears as discrete steps in the sampled sound where there were smooth curves in the original (see Figure 2).

If resolution and sampling rate are both high, the steps are small and the sampled sound is nearly indistinguishable from the analogue. At lower sampling rates and at 12-bit and 8-bit resolutions, the effect starts to introduce a 'crunchy' quality to the output that, at really low resolution, sounds like a horde of small gremlins chewing Kelloggs Frosties. For CD-quality, 16-bit resolution (65536 levels) is used and such errors are inaudible.

The main advantage of digital sound over analogue is as follows. In analogue systems, losses occur at every step and whenever the signal is stored, duplicated, transmitted or treated in any way, it is degraded by the introduction of 'noise' (tape hiss, mains hum, circuit noise and so on).

With a digital system however, some information is lost during quantization but, from then on, the encoded values can be copied, transmitted or, in some cases, modified (delayed, reversed, looped etc.) without any further distortion.

You get what you pay for

So why don't we sample everything at high speed with high resolution? It comes down to cost.

For CD-quality stereo sound, your computer has to cope with 88,200 sampling operations per second, so you'll want a good processor.

Then, to store a good few seconds worth of data you'll need fast memory and a fast hard disc.

These factors conspire to put the cost of dedicated audio samplers used by hi-tech 'musos' up to at least £1000. For applications which require intelligibility rather than beauty (solid state answerphones, games), all you need is 8-bit mono hardware, with sampling at rates as low as 10kHz. This consumes around 600K per minute and costs a lot less.

In the Acorn field, Arm3 machines using the Eagle M2 Multimedia card, for example, will handle sample playback at up to CD rates and resolutions. The Lark card reviewed last month,can sample at 16-bit rate.

Next month I'll look at tricks and techniques of sound sampling.

Glossary

ADC: Analogue to Digital Converter ('A to D'). An electronic device which turns audio into digital samples

Amplitude: loudness, intensity

Analogue signal: a continuously changing electrical signal 'analogous' to a sound; found in the audio sections of a sampling system (microphones, amps, speakers)

DAC: Digital to Analogue Converter ('D to A'). An electronic device which turns the digital sample back into audio

Digital signal: a stream of electrical pulses ('noughts and ones') which carry audio information as sample values

Frequency: the rate at which something vibrates

Hertz: a unit of frequency. The number of times something oscillates in a second, so 1000Hz (1kHz) = one thousand times per second

Noise: random or unwanted signals

Nyquist theorem/Sampling theorem: A mathematical theorem which states: 'To represent digitally a signal containing frequency components up to x Hz, it is necessary to use a sampling rate of at least 2x samples per second'

Pitch: a musical interpretation of frequency

Quantization: the process of converting momentary audio amplitude into sample values

Quantization distortion: distortion produced in sampling when amplitude is 'rounded' up or down to discrete levels

Resolution: the number of discrete intensity levels used to sample an audio signal, usually described in 'bits' (so 8-bit sampling uses 256 loudness levels)

Sample/Sample value: a number which describes the amplitude of an analogue signal at a given instant

Sampling rate/frequency: number of samples taken per second during 'A to D' conversion (CDs are sampled at 44.1kHz, for example)

Tone/note: sound which repeats regularly within the audio spectrum, in other words one which has a discernible pitch

Transducer: a device which transforms one form of energy or information into another (microphones turn sound into electrical signals, for example)



We look towards photographic verisimilitude (reality) on the computer screen with great excitement these days, each advance being rapidly superseded by another.

Acorn's amazing Risc PC now offers the temptation of up to 16 million on-screen colours and has options for built-in Kodak Photo CD-compatible drives, allowing our very own photographs to be viewed at the highest resolution.

Earlier this year, a number of Primary and Secondary Schools in Sandwell invested in A5000 computers with multimedia expansion units that could read Photo CD, but as yet, no discs to try out. So, it seemed a good idea to do something about this by cutting a few.

Starting out

Certain issues had to be resolved before I dashed out with my camera to grab the hundred pictures needed for the disc.

Firstly the images had to be relevant for use in the National Curriculum, and secondly the images had to originate from the West Midlands, so that the original site could be easily revisited and explored further. The Black Country Museum satisfied all these requirements.

The museum has to be seen to be believed. It is a unique example of a reconstructed turn-of-the-century Black Country village, complete with recreations of roads, tramlines, a real mine, a village centre with shops, a pub, a canal system with an iron works, a rolling mill and a fairground.

It is an even more remarkable resource for the 80,000 school children who visit each year due to the fact that most of the museum buildings are in working order and contain a wealth of original artefacts.

But the real spirit and uniqueness lies in the dedicated staff dressed in traditional costume, lending a rare warmth, hospitality and unique sparkling humour to the realities of the hard life in the industrial Black Country.

There is so much to see that it takes more than a day to take in everything, which in effect comes close to a virtual reality history lesson for the visitor.

Taking photographs

The next important stage involved carefully explaining all the ideas to the Black Country museum director Ian Walden and gaining permission to go ahead. Then it was up to me to get started.

I decided that the photographs should be taken in the order you would walk around the 26-acre site.

This took approximately four days over a six week period, mainly determined by the weather.

My main concern was that I should do justice to such a rich resource with one hundred spot-on photographs, so that Sandwell school children would be able to revisit the museum at any time on the computer screen in the classrooms.

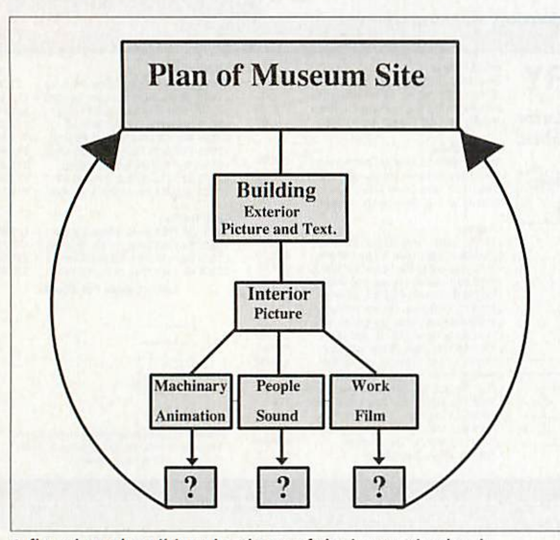
With over 42 locations marked on the site map, I began with exterior shots of each building. The interior shots proved more problematic because most were poorly lit Victorian buildings, but with the help of the museum archive collection this situation was resolved.

It was also important to include shopkeepers, chainmakers and the many local inhab-itants in situ as they are an integral part of the museum.

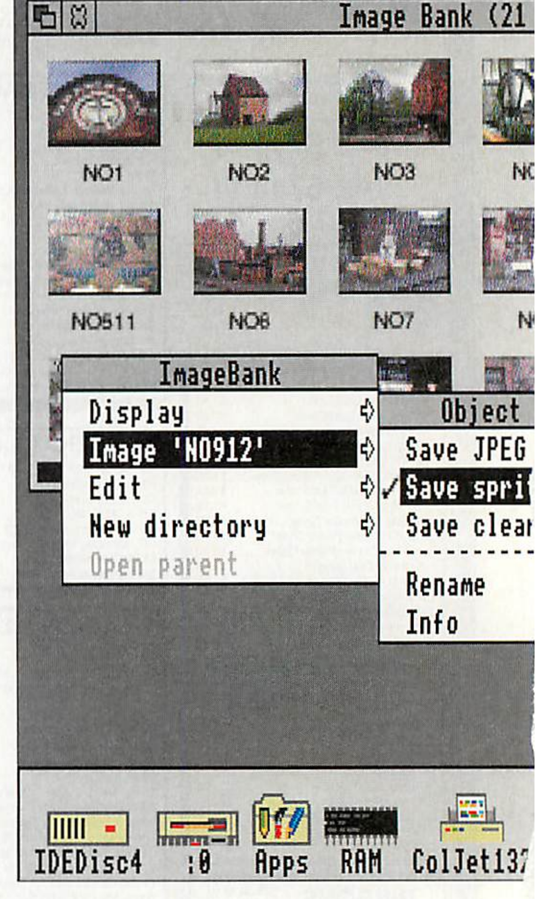
In the end I had 66 good photographs out of 200 taken, and as promised I delivered the photographs to the museum and arranged a meeting with the director to discuss the next stage.

Meanwhile, back at the ranch (Sandwell Micro-technology Unit) I had time to explore three important issues.

Firstly, how to easily distribute the large numbers of images economically to schools that don't have access to Photo CD technology.Secondly how could the museum site be explored using multimedia authoring software, and finally how to go about commercially cutting a large number of Photo CD discs.



A flowchart describing the shape of the interactive book



The obvious choice for storing large numbers of images onto floppy disc is Irlam Instruments' excellent *ImageBank* package (costing £25).

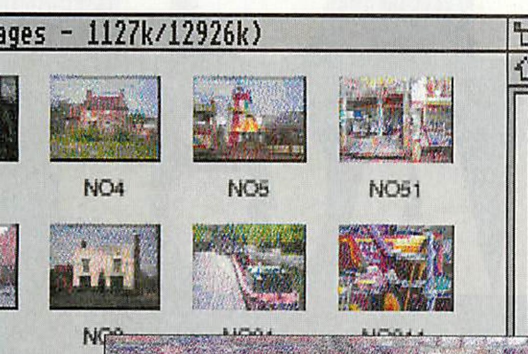
This compression software will squeeze 21 full screen 221K sprites onto one 1.6M disc. For this you trade 25 per cent in lower picture resolution, but even this is configurable and using Computer Concepts' excellent Eagle M2 digitiser, the loss is hardly noticable.

The images are compressed using the JPEG technique, stored in 24-bit format and are presented as small thumbnail squares on the screen. Different image outputs for saving are also supported, including JPEG, Clear and Sprite.

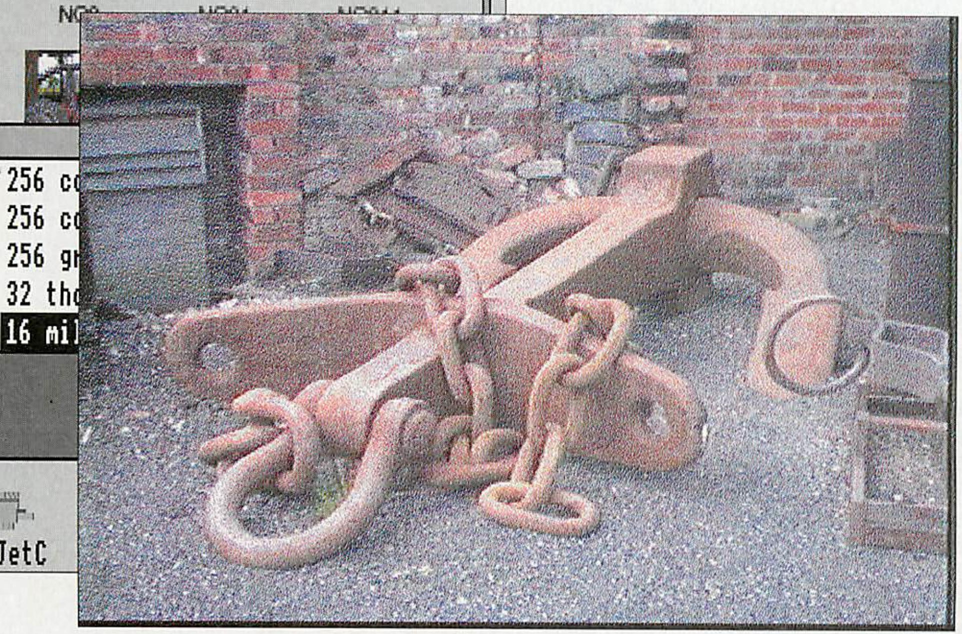
There is also a 'read only' cut down version which you are allowed to distribute free, so you can produce your own customised demo style image banks.

ImageBank also helped me to organise the running order for the CD and provide a visual taster for the schools with a *ReadMe* file included as an explanation.

It is important to note that when the Black Country disc is cut these high resolution images will be transferred to *ImageBank.*



Irlam Instruments' ImageBank was used to store all the photographs, as it compresses the sprites using JPEG, and enables thumbprints of the pictures to be viewed easily and quickly



An impressive anchor from the museum

Pete Worrall explains how he compiled a Kodak Photo CD for the Black Country Museum

Genesis Professional

It's all very well buying a disc with 100 high-quality pictures, but what can you do with them other than look at them? This is where multimedia comes in.

As a trial run, Oak Solutions' powerful *Genesis Professional* (costing £120) was used to suggest starting points for multimedia investigations.

Genesis Pro allows interactive pages of information to be created combining text, image, sound, animation and film to be used in different interactive ways.

For example, we scanned the site plan showing the museum buildings, with instructions to select a building to find out more about it. Select OK and, abracadabra, it appears with the information.

Next, imagine starting off with a detailed picture of the inside of Gregory's Store in the museum, with 1001 items to select. You choose the shopkeeper and hear an audio recording of her working experiences, dialect and all.

Then you could include video footage showing her weighing apples on metal scales or wrapping parcels in brown paper and string. The possibilities are endless and only limited by your imagination.

It is important to design a flowchart plotting the shape of your interactive book. The *Genesis Browser* application also allows your work to be freely distributed on disc. It is hoped that *Genesis Pro* will encourage original cross curricular research on the museum site.

During a meeting at the Microtechnology Unit, we discussed the use of *ImageBank* and *Genesis* and covered some new areas such as the possibility of installing one or more Risc PCs within the museum to act as an interactive browser for visitors, possibly with a touch-screen window for easy access.

It was also felt that guidelines and examples should be made available to help teachers using this resource. We all agreed that costing on the final cut appeared to be reasonable.

Finally, there was the prospect of monitoring all the work produced by West Midlands schoolchildren.

Black Country Museum information

Open every day including Sunday.
Three miles from junction 2 on the M5 near Dudley.
£4.95 adults, £3.40 children, £14 family ticket.

The final cut

Boots will press a Photo CD from individual negatives for about £60 and will duplicate at £25 a time, but if you are into multiple commercial copies, it is handled differently. This is what happens:

1 First of all the negatives and transparencies must be digitally mastered onto one disc via a Kodak approved bureau. The one I approached offered individual negative or transparency transferral at 75p each plus VAT, so the initial outlay was £100.

2 Next Kodak examines the disc from a quality control angle.

3 Finally a glass master is cut, costing £500 from which copies can be duplicated. One hundred discs works out at 80p per disc (including 10p in royalties to Kodak) with packaging at 85p.

This is a seven to ten day service, so the total costing per disc is £7.65 (for 100). For more Information call Nimbus Information Systems on (0633) 867777.

Hints and tips for CD photographing

1 You will require a good camera with additional Zoom lens (I used a Pentax P30T).

2 Use plenty of film, transparencies or print, so that you have a wide choice to select your best 100. I used six films (over 200 shots).

3 Don't take all the pictures by youself, a second professional viewpoint can be of great value.

4 If possible duplicate the shots with a Canon Ion camera as these can be immediately processed through a digitiser, acting as an immediate rough blueprint for your work.

5 Try to include people in the pictures where appropriate; it adds that extra human touch.

6 When you have finished, sort out the best photographs and fix them onto A1 sheets of card in the order that you would like to see on disc.

7 A light box is a useful addition for scrutinising large numbers of negatives.

8. Label the prints and the negative strips clearly because at some point the best negatives will be required for the disc and must be clearly marked before sending off to be mastered.

In brief

The latest CD-Rom for the Risc PC and *ImageFS*, the universal graphics file format importer

Image FS

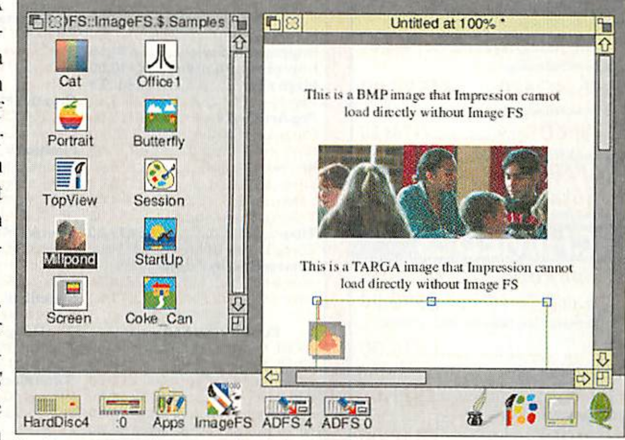
Supplier: Alternative Publising Ltd
Tel: 041-248 2322
Price: £34.95 + VAT

It's very apparent that inter-platform compatibility is becoming a major issue in the Acorn world. Colton has developed PC software with file compatibility to the Acorn version; the first Risc PC co-processors should arrive by the time of going to press; Aleph One will develop a Power PC co-processor and Computer Concepts has already finished *MacFS*. *ImageFS* is the latest of Alternative Publishing's applications in this software area.

The program enables you to import a vast range of foreign image file formats. But you can do that already, I hear you cry. *ImageFS* is, however, unique in that it allows the foreign files to be loaded straight into any sprite-compatible Risc OS 3.0 (or later) program.

The one aspect which is really striking about *ImageFS* is its stealth and speed. The only real giveaway is the fact that the foreign files which you may be dragging into *Paint*, for example, which can only load sprites normally, don't have sprite file icons. The speed of filtration is astonishingly quick. Even with complex file types like TIFFs from a floppy the delay is minimal. A small and rather attractive window with a graphical representation of the percentage of completion pops up for 'big jobs' – longer than three seconds – and apart from this and the icon on the bar, *ImageFS* remains invisible.

The packaging is great. To complement your Computer Concepts Graphics Loaders, *ImageFS* comes in a CD-style case on a single disc and with an excellent manual. The manual explains how the program can be customised so that advanced Risc OS programs with their own built-in image filtering systems can load some image types directly.



Use ImageFS and you can load foreign file formats into Risc OS 3.0

It also explains a great deal about the structure, origin and development of the filetypes it support which, believe it or not, is an interesting read. *ImageFS* can filter Deep Sprites, CMYK sprites, PCX, BMP, Clear files, PBMplus, Targa, TIFF, GIF, MacPaint, IMG, ColoRIX and PiCT2. More will follow including, possibly, JPEG. The system works correctly with other filing systems such as DOSFS, *SparkFS* and *MacFS* for image loading from these filing systems into Risc OS.

The price of the program is reasonable, it's fast and effective, and generates good quality images using Mr Steinberg's ubiquitous algorithm for those limited to 8-bit programs and displays. Wouldn't it be great if there were programs that did the same thing, just as well, but for foreign DTP, vector and spreadsheet files. I wonder what will emerge in 1995.

Jack Kreindler

CD300ia CD-Rom

Supplier: Cumana
Tel: (0483) 503121
Price: £249.95 + VAT

Cumana's new CD-Rom drive for the Risc PC is a superset of the newly announced Acorn CD300i, which is supplied for Acorn by Cumana.

There are a couple of important differences between the two. Cumana's 300ia version has a piggy-back audio-mixer board enabling both conventional CD audio and computer sound to be played through the Risc PC's internal speaker or headphone socket without the need to switch cables – an important point teachers will appreciate.

This facility adds £50 to the price of the standard Acorn drive, but for this you also get a Clares' *Pro Artisan 2* CD-Rom which sells typically for £129 + VAT. Discount vouchers for other CD titles are also included.

Unless these extras really are useless to you, the 300ia is a much better buy than the 300i. The drive mechanism is a familiar Panasonic unit as used in Cumana's other SLCD (Single Low Cost Drive) packages but is supplied in bare form to be mounted internally in a Risc PC 'slice'.

This involves removing the 5.25in half-height blanking plate at the front of the slice. I used a scalpel, which was useful for trimming the aperture afterwards, but do beware of sharp tools. The drive then slots in and is secured with two small screws. That's the easy bit.

Next, you must remove and replace several ribbon cables and attach flying leads as well as mount the small daughterboard inside the base unit of the case using supplied sticky-fixers. This is a complicated task, hardly helped by an over-brief and un-illustrated instruction leaflet.

I'd only recommend the fitment as a DIY job if you're an experienced delver inside computer cases. Otherwise, it's a job for your local dealer according to Cumana, who says some will fit the drive for free.

The lengths of the supplied leads means the drive almost certainly has to be fitted to the bottom slice. Once fitted, the drive looks smart, despite its fascia not matching the Risc PC's grey case.

Performance is similar to previous SLCD drives we have tested – typical of most medium-priced double speed drives. Cumana's novel interface, using the Risc PC's IDE hard disc controller, works well and preserves a podule expansion slot.

However, you won't be able to add an extra IDE hard drive, and as the drive is a tray-loader, you won't be able to use it with the Risc PC case in sideways mini-tower mode.

Overall, the Cumana CD300ia is an attractive internal CD-Rom solution for Risc PC users, especially if you can make use of these bundled extras over the basic 300i version.

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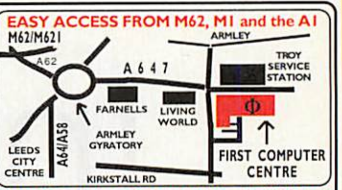
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A game of numbers

Geoff Love looks at some of the maths 'games' available, all claiming to enlighten, educate and entertain

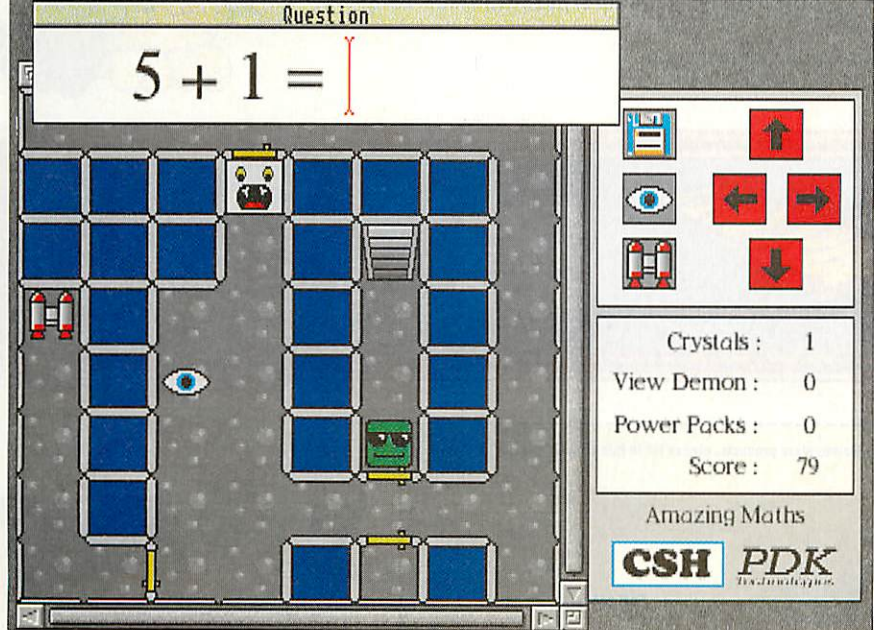
A bald-headed man in a tweed jacket whose pocket held a calculator with more buttons than a Pearly King – that's who taught me maths. Of course, that was when people thought the National Curriculum was a horse race and egg-headed sixth formers did strange things with their PETs behind locked doors.

Things have changed since then and computers now have the potential for de-mystifying and adding a bit of spark to what, for many, can be a daunting and frightening subject.

But does what is currently on offer live up to its claims? Can it make maths fun? Can teacher turn Class 6 into 30 potential applicants for a job on Countdown when Carol Vorderman retires? Here we look at a few of the packages available.

Amazing Maths

This is an application designed to perform a simple task – to give children practice at basic 'four rules' mental arithmetic. You are the explorer and have the task of journeying through up to 15 different mazes. You move one square at a time by clicking with the mouse or keyboard cursor keys. To move through a gate you must answer a question within a preset time limit. Answer it correctly and you can continue on your way. Should you stumble across an invisible demon you will have to answer five questions in quick succession. Failing a question will lose you one of your crystals which are collected along the way.



Maze hopping with *Amazing Maths* from CSH

Various power-ups can be collected to help you jump walls or see the dreaded demons. If you reach the stairs you can climb to the next level which is just that little bit harder.

The gameplay in *Amazing Maths* is very good. The graphics are nice and there is that 'I'll just have one more try' element essential for long-term success.

Sound samples are used and are the type children love but drive teacher slowly round the bend – one sounds suspiciously like Bananarama! You can always switch them off if you're a real spoilsport, though.

The questions used can be targeted by the teacher. Controls exist to select the type of sums asked (addition, subtraction, multiplication or division) singly or in any combination.

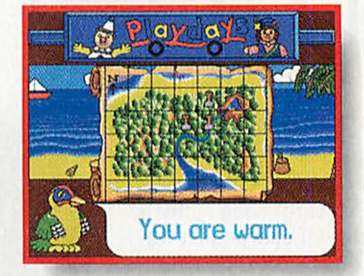
The upper and lower limits of numbers can also be set, so for example all sums could be on six to nine times tables. A fixed number can also be chosen so all sums contain a certain digit.

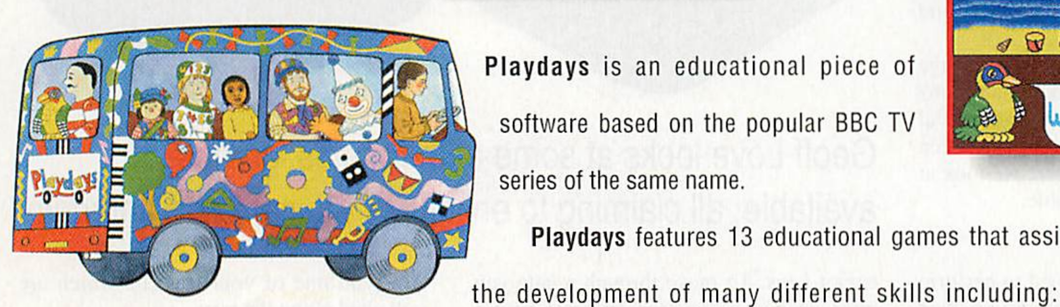
The time limit allowed for each question can be specified and finally, all this information can be saved to disc. When answering questions input can be from keyboard, mouse clicks or Concept

BBC Playdays











Playdays is an educational piece of software based on the popular BBC TV series of the same name.

Playdays features 13 educational games that assist in the development of many different skills including: counting, spelling, reading, logic, memory, coordination, reasoning etc.. Led by Why Bird, the favourite characters from the TV series are featured – all helping to make *learning fun.*

Playdays comes complete with a comprehensive teachers/parents pack to assist in the teaching process and references to the National Curriculum.



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keyboard using the overlay provided – this also controls all other game aspects.

If you score well you may be entered on the high score table. Records can also be saved as a text fill, allowing teachers to see which types of question individual children have managed well and which have caused problems.

This is a fun, addictive game which is great for sharpening up mental arithmetic skills. My only criticism was that on scoring zero on my first go the game ended with a 'Well done, Geoff. You have scored 0!'. I know as teachers we're not meant to make value judgements but this is stretching the point a little!

Maths Circus

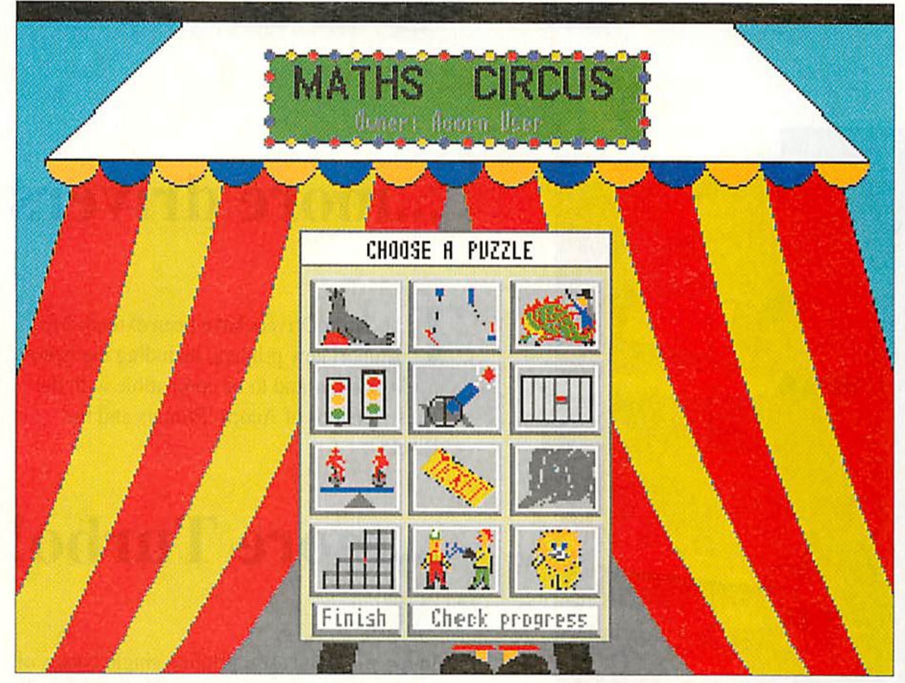
This is different to many of the more 'traditional' maths programs in that it contains problem-solving exercises rather than drill and practice number work.

The scenario is centred around a visit to a circus, with all the activities being related to that theme in some way. Once inside the big top the user can choose one of 12 activities to attempt. Each of these activities can be tackled at one of five increasing difficulty levels – the levels can be preset by the teacher if desired.

The actual tasks are varied, humorous and ingenious. Again, there is the element of addiction which forces you to keep on trying until you finally manage to shoot Captain Blunthead into the tank of water. Or perhaps I'm just a very sad individual who gains immense pleasure from seeing Captain Blunty getting a good soaking.

Other tasks include balancing unicyclists on a beam, arranging lions in order of size and making sure the seals have the correct colour balls. All are challenging and, set on the highest difficulty level, some are very hard. Input is by mouse or switch.

In order to solve the problems at the higher levels, children really will need to develop powers of observation and reasoning and will also need to note down what they see.



Choosing a puzzle in 4Mation's *Maths Circus*

As with many 4Mation products the package includes some supporting worksheets and also some ideas for related work in other curriculum areas.

This is one of the few packages that really does develop aspects of Maths Attainment Target 1. It is ideal for Key Stages 2 and 3.

I challenge anyone to have just one go at *Maths Circus* and not be duty bound to try once again 'just for luck'. The children I tried it with thought it was great – I sat up half the night trying to finish it.

10/10: Number, Algebra, Statistics

These are three separate packages all conforming to the well known 10/10 format. For those who haven't seen 10/10 products before here is a basic outline.

Each package addresses a varying number of Statements of Attainment from the National Curriculum, by means of six different games on each disc. Games can be attempted at a number of different levels.

Empty : Achievement Record 10/10 Mathematics (Number - AT2)

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Addition	2a.1	4a.4	3a.3	4a.6		2b.1
Subtraction		3a.4	2a.2	4a.5	2b.2	
Multiplication	4a.2	3b.1	5a.3	3b.2	7b.3	4a.1
Division	3c.2	4a.1	5a.4	7a.2	4d.4	
Fractions		6a.4			5b.1	8b.2
Decimals	6a.5		6a.9			
Percentages	5b.2	6a.1	6a.8			
Estimation	8c.1			6b.1		3d.2
Units				3e.1	3e.3	5d.1
Powers					8a.1	5d.4

AT2 Level 2a.2 (i) Know and use subtraction facts up to 10

RETURN TO MENU

10/10's attainment target list for *Statistics*

A score grid is available for each player which can be set to reflect the Statement of Attainments and levels attempted. It gradually becomes coloured in depending on how well you perform.

The games vary in type from arcade to quiz. Many are variations of games seen elsewhere – but this is not a criticism.

As an example, the six games on the *Statistics* pack are: *Bomber*, where you drop blocks from a helicopter to make a block graph; *Survey*, where you record the different animals you see pass the screen and answer questions on what you have seen; *Cheers*, a snakes & ladders with questions and finally *Archer*, *Whack It!* and *Sniper* where you must shoot the correct answers.

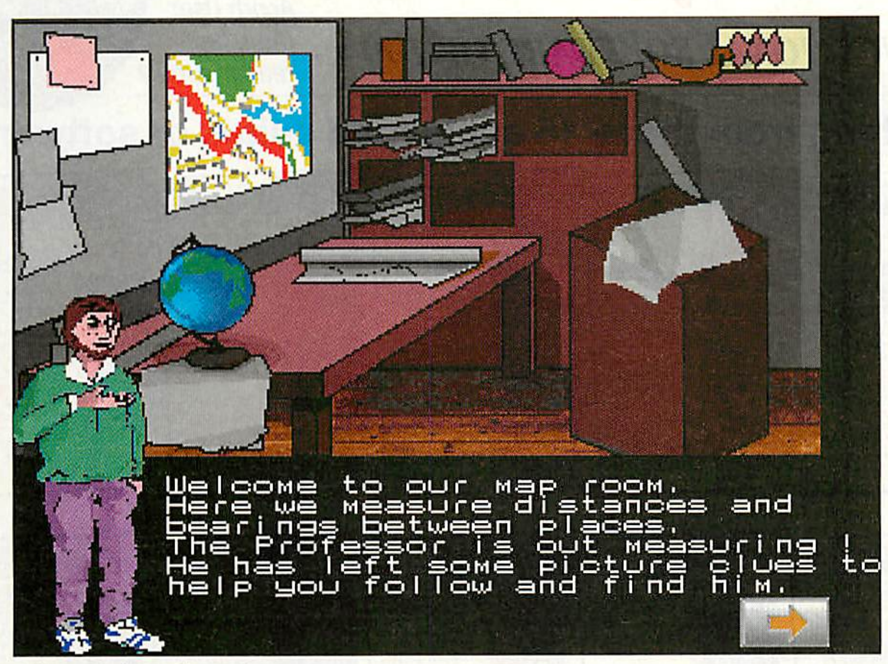
The games run well, although the graphics are a little cheap and cheerful. Children I tried them on enjoyed them at first but did become bored fairly quickly.

Some of the games go on for quite a while and, and as the saying goes, 'I've started so I'll finish.' There's no escape – you either have to finish the game to the bitter end or switch the computer off.

Another problem I encountered was that after the software had reduced my font cache to 0K, it would not let me run another 10/10 piece of software until I had reset my machine – annoying.

Educationally, I have to say I am not a great lover of 10/10 products. The parts of the National Curriculum addressed are often very fragmented, covering a wide range of levels and areas. While some could see this as an advantage, I find it makes it very difficult to tie the software closely to a class or group activity.

Another point to beware of is that this type of software is very open to abuse. It is all too easy for a teacher to put a pupil on the computer to do this type of work when all other work is finished, and be under the illusion they are doing doubly worthwhile work – Maths *and* IT. In reality there is no IT content and the Maths may not be relevant to what they are currently studying.



Trying to find *Don the Professor...*

This may sound harsh and is obviously beyond the control of the software, and I admit to being as guilty as any on some occasions, but software which aims to deliver closed content to such specific targets has to be correctly targeted otherwise it it totally worthless.

Somehow I doubt this is happening in many cases.

Don the Professor

This is a four disc collection of 12 games/problems aimed at Key Stages 2 and 3. The scenario goes as follows.

Don (the professor) is either very lazy, sadistic, or plain incompetent because he seems to need help with just about everything. You wander around the college exploring and in each room you enter a different problem awaits you.

The four discs cover different 'areas' of the college and have problems based on Number, Algebra, Shape and Space and Data Handling. The problems are very inventive and while the tasks are clearly defined there is definitely a problem-solving feel to each task rather than a simple question and answer. Children will certainly have to experiment and use trial and improvement methods if they are to succeed at this one.

The manual is brief but well written, with one page being devoted to each of the 12 activities. The National Curriculum Statements addressed are stated, together with relevant cross-references to SMP 11-16 and Oxford Maths schemes. The task is outlined together with ideas of how to attempt it and some hints to its solution.

There are also details of how the difficulty level chosen affects the progress of each game. I found the problems both stimulating and thought provoking.

They strike the balance between being open problem-solving activities and having a prescribed, closed mathematical content. The scenes and graphics used are well thought out and give the game good atmosphere and humour.

This is part of its charm and will help to maintain the pupil's interest and motivation for some time.



Don the Professor has charming and interesting graphics

Targeting the software is fairly easy because each room addresses a different mathematical concept or area, so pup-ils could be restricted to one room to concentrate on a certain concept.

The problem solving element also means that a given activity is suited to a fairly wide ability range – more so than with straight question/answer activities.

If you want something to cover the maths areas mentioned using problem solving methods all mixed together with a dollop of fun, then Don could be you man.

Summing up

So what have we got and what do you need? For Attainment Target One problem solving, *Maths Circus* is a winner: it's original and open to use in many contexts. *Don the Professor* has elements of this in some games too and is good fun.

For the other Attainment Targets both *Amazing Maths* and *Don* have their place. *Amazing Maths* would be great in the Primary classroom to get out once in a while to brush up on some basic number skills. It's well put together and if used in short bursts could offer very strong motivation for children.

Don covers a much wider content and pushes well up into Key Stage Three. Again it is very motivating and many parts of it team factual knowledge with an investigative approach.

I'm afraid that for me the 10/10 packages just don't stand up to the grade when viewed against the competition. The presentation looks dated and as a teacher I find them hard to plan into my work effectively.

I do however appreciate that many copies have already been sold so some people must like them. Whoever you are, we'll have to agree to differ.

With whatever software you choose the bottom line must always be 'Will the software do what I want it to?' If the answer is 'yes', go ahead and use it.

If you find you have to do what the software wants, or worse, it's sitting in a corner of the room with a couple of captive pupils and you're not sure what it's doing to them, then you need to reassess – the next time you look it might have grabbed someone by the binomials and be doing something very nasty indeed.

Product details

Product: Amazing Maths
Supplier: CSH
Tel: (0480) 467945
Price: £19.95 + VAT

Product: Maths Circus
Supplier: 4Mation
Tel: (0271) 25353
Price: £27.50

Product: Don The Professor
Supplier: Selective Software
Tel: (0458) 43079
Price: £49

Products: Algebra, Number, Statistics
Supplier: 10/10 Software
Tel: (0742) 780370
Prices: £25.95 each

Hold the first page

Geoff Preston examines Longman Logotron's cost-effective introduction to DTP, FirstPage

Now, I know that a lot of readers see the page heading 'Education' and immediately turn over, and if the next page says the same, they turn over again.

But if you've got this far, stay a while longer because you might read something which could be of interest to you. The education pages are not the exclusive domain of teachers and students as this review will, I hope, confirm.

FirstPage is a desktop publishing application. When I received this product, I was initially a little sceptical.

Having got *Impression* (*Publisher* and *Style* and with a third on the way), *Ovation*, and about six word processors (including *PenDown*, also from Longman Logotron) I couldn't quite see why the Acorn platform needed yet another document processor.

After using *FirstPage* for about a day, I still held the same opinion. However, this is a superb program and will be very popular in schools, especially primary, but I can't see why this program could not be used well into secondary school.

It may be that *FirstPage* could fulfil the DTP needs of the average home computer user even though it has, I feel, three notable omissions.

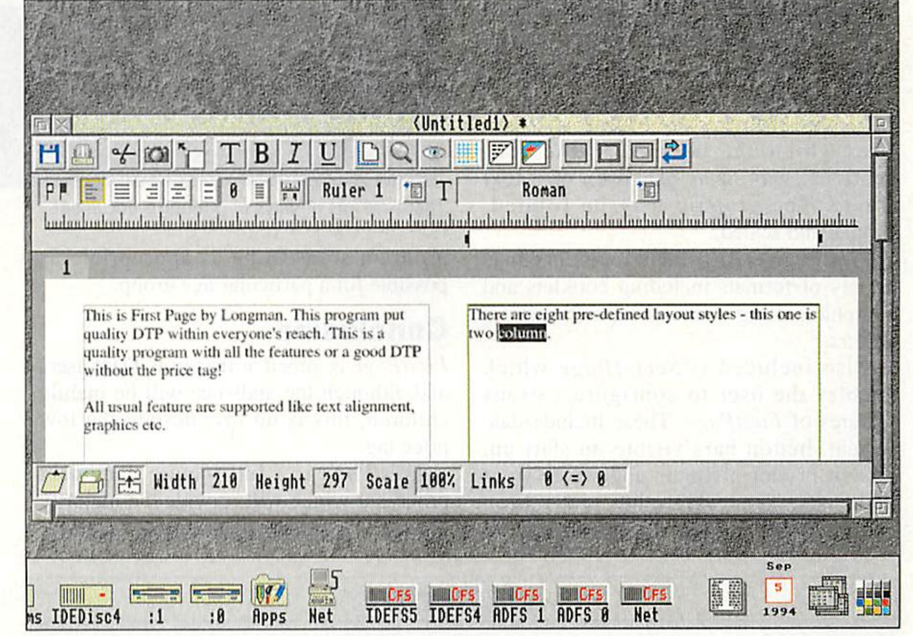
What you get

The pack comes with two discs and an A4 manual which is divided into three parts: a tutorial, a reference section and a quick reference guide.

The tutorial section takes the user through the main features of the program, frequently referring to example documents on the second of the two discs.

Anyone picking up the manual could be mistaken for thinking it is a program for younger children only. Refreshingly, it is very clear, having lots of screen shots and eye-catching graphics to illustrate points.

Once loaded, click select on the *FirstPage* application icon to display a dialogue where may choose the name of a document template from the list of about half-a-dozen pre-defined templates. These include a two column page and a fax template. Click Select on Open and the new document is opened. The first thing you notice is that *FirstPage* features a button bar very much like that of *Impression*. Unlike *Impression*, you can see all of it in modes 12 and 15, or for multiscan monitors, modes 27 and 28 (*Impression* requires a wide screen mode like 31 to see all the buttons on the button bar).



FirstPage is a flexible frame-based DTP package

Unfortunately, *FirstPage* does not make use of Acorn's *Help* application, so if the exact meaning of a button is not clear, you'll need to refer to the manual. This is a serious omission given that *FirstPage* is claimed to be state-of-the-art.

Text handling

Text can be typed directly at the keyboard or it can be imported from either *Edit* or *Pendown*. All the usual alignments are possible (left, right, centre and full) as well as all the editing features (cut, copy and paste). Keyboard short cuts are also used throughout and these appear on the menus, although the keyboard short cut for paste does not seem to appear in the manual.

The second major omission is the lack of a spelling checker. This can of course be overcome by importing spell-checked text from *Pendown*.

Indeed, Longman intends users to do just this and although I accept its comment that graphics are produced in a graphics package and word processing is done in a word processor, I think it would make life a little easier if spell checking could be done on the text that is entered directly.

Text styles are employed and can be easily defined by the user. Clicking on the letter T on the button bar opens a dialogue to create a style. Each style must be given a name, a font name and a font size.

The Try option lets you see what your style looks like. When you've finished defining it, click OK to save it and the name you've used will now appear on the style selection menu. Text styles are saved as part of the document.

Frames

FirstPage is a frame-based application which basically means everything you include in the document must go inside a frame.

Apart from putting things into each frame, you have several options of things to do, with each frame including putting a border around it.

The pack is supplied with 20 borders in the form of *Draw* files which can be applied to any frame or frames. A frame is drawn as either being graphics or text. If it's for text, it may also be given either a colour or a graphic backdrop.

Be careful with this feature as it will fill all of a frame with a graphic and in doing so, will stretch either the horizontal or vertical size of the graphic to fit. This, of course, can lead to serious distortions.

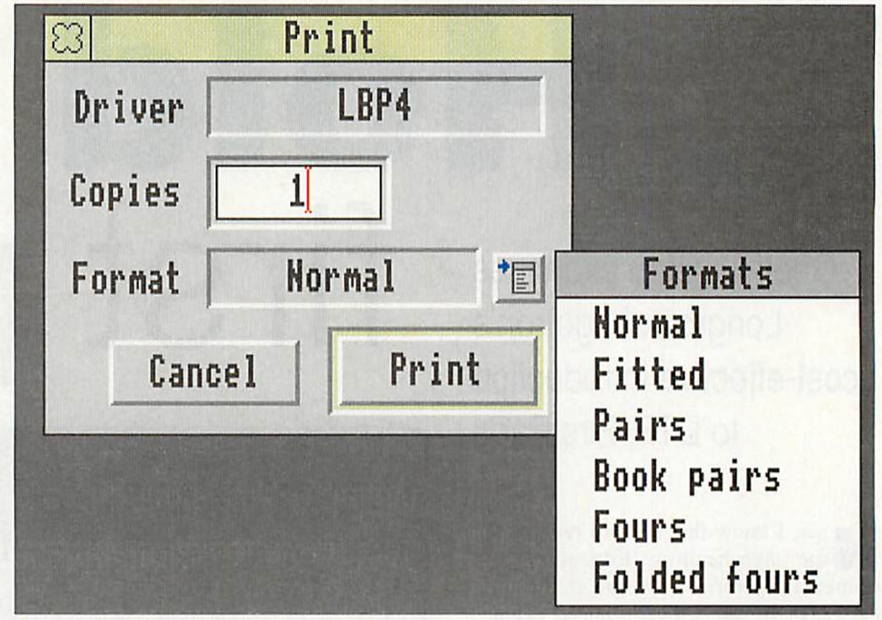
I particularly liked the method of linking text frames, which involves dragging a red dot from the bottom corner of a frame and into the frame you wish to follow on. Simple, and straight forward.

All DTP programs must be able to handle graphics and *FirstPage* fulfils most of the likely requirements, plus a few extra features for good measure.

Also on the discs are 65 clip art *Draw* files which can be used in the conventional way or as backdrop of a text frame. The graphic may be rotated, flipped and scaled.

FirstPage will print documents in a variety of formats including booklets and pamphlets using standard Risc OS printer drivers.

Also included is *Set1stPage* which enables the user to configure various features of *FirstPage*. These include date format, button bars visible on start up, default printer dialogue and frame store pathname. This feature has really been designed for the teacher to set up the program so as to be as appropriate as possible for a particular age group.



There are lots of ways of printing a document

Conclusion

FirstPage is aimed at first time DTP users and although the audience will be mainly children, this is no toy, despite the low price tag.

FirstPage is a full-feature document processor which will provide the majority of users with more than enough features to satisfy their DTP needs.

It's a pity about the lack of a spelling checker but at only £49 for a single user copy this is excellent value for money, especially when you look at some word processors which have fewer features and cost a lot more.

In fairness to Longman Logotron, the programmers have worked hard to make *FirstPage* run on a 1Mb machine, which is important, seeing as the package is priced in the typical A3010 owner's price range. The addition of a spelling checker and online help would make the program too large and therefore would put it out of the range of many primary schools who can't afford lots of Ram.

At £149 for an unlimited Primary Licence and £190 for Secondary, this is well within everyone's reach.

I said that I felt there were three omissions. When the BBC computer first appeared, almost every program made extensive and even excessive use of the function keys, so much so that at one stage the production of function key strips was a veritable industry. This useful slip of paper seems to be out of vogue at present which I think is a shame, as visual reminders are always useful. *FirstPage* uses both function keys and keyboard short-cuts, yet does not have a keystrip to remind the user what key does what job.

So, on the cover disc is a *Draw* file which will print out a function key strip for *FirstPage*, and for good measure, I've also included a labelled drawing of the button bar which should help overcome the first shortcoming.

Typestyle
Style name: Roman
Font — Font: Trinity; Weight: Medium; Style: (Plain)
Size — 8 10 12 14 18 24 28 36 48 72; Height: 12; Aspect: 100 %
Colour — Set colour
Underline
Try: FirstPage
Delete | Save | Cancel | OK

Pre-defined styles makes font selection easy

Product details

Product: FirstPage
Supplier: Longman Logotron
Tel: (0223) 425558
Price: £49 + VAT



Best of the bunch

Geoff Preston presents a round-up of the best recent CD-Rom releases for education

The Physical World is a valuable resource for an LRC

CD-Roms are now coming thick and fast. Most are still 'encyclopedia' types in so far as they are merely vehicles for disseminating information. Some require the user to do some work and fewer still are truly interactive.

I can't help feeling that some are the result of people apparently jumping on the bandwagon. There isn't space to review all of the new discs, not even all the good ones, but I believe these are a good selection.

Cumana

This name has almost become synonymous with CD-Rom. Not only is Cumana the largest distributor of CD-Rom hardware, but also produces and co-produces many excellent CD-Rom titles. Cumana can be contacted on (0483) 503121.

Goldilocks on CD (£39.95)

This is a CD with a difference because it's actually an audio disc controlled by the software on a floppy disc, and is strictly not a CD-Rom.

Aimed at Key Stage 1 and 2 (approximately up to 10 years old), it comes with a range of activity sheets and a resources disc, and is designed to encourage skills such as reading, writing, matching and sorting.

The text can be read straight from the screen or, by clicking the mouse on the text, it will be read from the CD. The mouse can also be used to investigate objects seen around the place and there are some exercises for the little ones to do.

Contrary to the supplied description, I feel this is a Key Stage 1 resource. Do they really imagine many 10 year olds will be motivated by Goldilocks?

Karaoke Macbeth (£49.95)

When I first saw the press release for this, my immediate reaction was somewhat less than favourable. However, the more I thought about it, the more it appeals.

It's not going to be to everyone's taste, but for those schools who do study Macbeth, I recommend it as an entertaining alternative way to learn and understand the story.

It was developed by Animated Pixels and features professional actors and actresses speaking the parts. You can opt to take any or all of the parts yourself, and have on screen prompts if you wish.

This is a very well-produced disc. Hamlet, Twelfth Night, Romeo and Juliet, and A Midsummer Night's Dream are next in line for the same treatment.

Anglia Television Ltd

Anglia is building an enviable reputation for developing some excellent material at remarkably low prices. These CD-Rom discs will find their way into many schools and will be used to support mainly science and humanities subjects.

Some are stand-alone discs while others require one of Anglia's data handling programs such as *KeyPlus*.

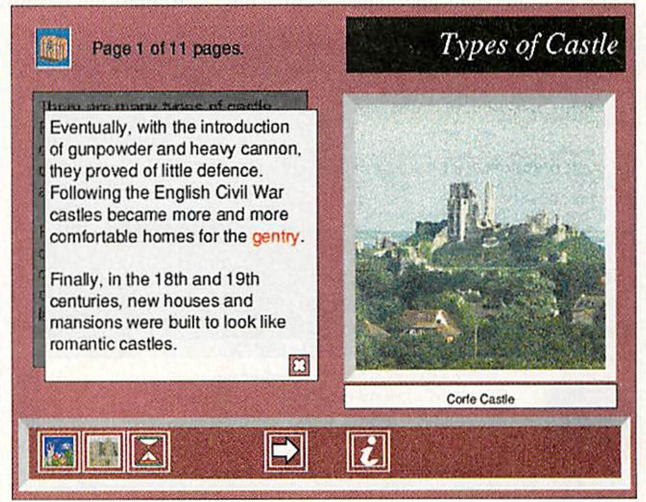
Networking is possible with all stand-alone discs but, as I've stated in previous articles, datafiles which are saved as applications aren't really network friendly. For this reason, I would not attempt to network any that require *KeyPlus*.

The prices quoted are for single user only; *KeyPlus* will need to be licensed for multi-users if you intend running any of these CDs over a network, (except those which are self-contained programs). Anglia can be contacted on (0603) 761245.

Understanding the Body (£40)

This is a self-contained disc and is aimed at Key Stage 3, although students at Key Stage 4 and possibly some at Key Stage 2 will find a great deal of valuable material here.

The subject has been divided into seven main sections, with a good mix of text, drawings and photographs. The worksheets are well thought out and provide some challenging exercises for students, while the text is both informative yet easily accessible.



Castles: an excellent value CD

Castles (£40)

One can usually tell a quality product by the packaging. This disc is very well presented and the contents don't disappoint.

It is another self-contained disc which introduces students to a large selection of castles in the British Isles.

It contains good quality drawings, photos and Replay movies and takes the reader through all manner of aspects of castles in Britain over the centuries.

Included in the contents are sections on design, construction and reconstruction – I can't imagine there's much else about castles that's worth knowing!

This is a very well thought out disc and will be useful to both Key Stage 2 and 3 students, and doubtless beyond.

19th Century Biographies (£25)

I got this disc through last year's Tesco Scheme and it is a popular source of reference material. I feel that a 20th Century version might prove even more useful.

It contains over 250 biographies which are presented as a KeyPlus datafile. The majority of the biographies contain photographs from the Hulton Deutsch collection and students may extract the photo and/or text for use in their own work.

After seeing this and other CDs in use, the facility of cutting text and importing it into your own document has mixed blessings.

I recently saw several students put together some very impressive looking essays using text and pictures taken from several CDs.

However it became apparent that only a few of them actually knew much more about the subject after they had completed their work.

Countries of the World (£40)

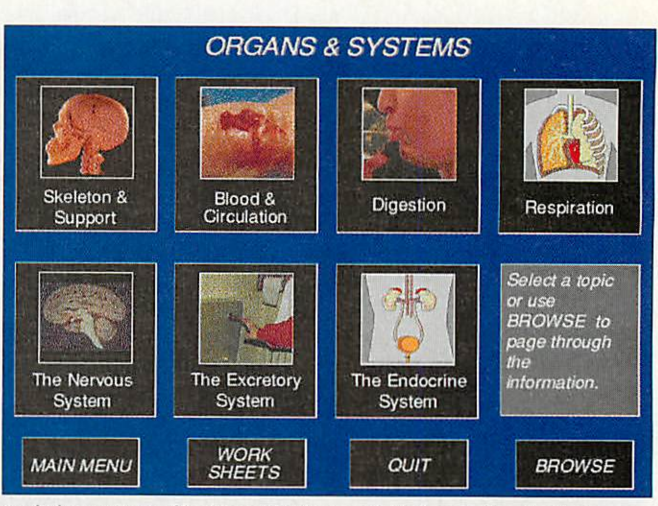
This CD, and the shortly to be released *Counties of Britain* (also £40), require *KeyPlus* or *Keynote*. The detail on these maps is more than adequate: Anglia has got the balance between detail and screen re-drawing time about right.

Sing-a-long-a-Macbeth

Nelson Multimedia

These CD titles were produced in association with Interactive Learning Productions.

ILP recently received the coveted gold British Interactive Media Award – the tenth in four years – and several silver ones to add to its collection.



A whole new way of looking at biology with *Understanding the Body*

These discs are all high quality products with heavy emphasis on interactive. All are priced around £150 for single user licence.

Nelson can be contacted on (0932) 252211.

The Physical World (£149)

Geography departments should take a very careful look at this product, but I feel it will really be invaluable in a learning resource area where self-help is the key.

This disc can be used in several ways, including as an encyclopedia.

Directions 2000 (£149)

There is now a Spanish version of this called *¡En Marcha!* (which received the award), with a German version on the way.

These should be in every Modern Languages classroom. Each comes with a sound sampling microphone so you can hear how you're doing.

Inventors and Inventions (£150)

This is my personal favourite. It contains over 1200 images from manuscripts, books and original drawings, accompanied with concise texts and some animations to show inventions in action and to illustrate some basic scientific principle.

This will be invaluable to Technology, History and Science classes. Great stuff!

Aspects of Religion (£130)

Religious Education has become a hot topic in recent times. In our modern, multi-ethnic society, this product may well point some schools in the right direction as far as teaching about religion is concerned.

If you intend running several CDs across a school network, this should be one of the standard reference discs.

Other companies

Langdale (£99 single user, £149 site licence which includes a resource pack)

Creative Curriculum Software has just released this CD which is aimed at Key Stage 3 Geography, although there is plenty of material there which will find its way into other areas of the curriculum. This is a very well-produced pack with lots of material to investigate.

The site licence includes a resource pack of photocopiable worksheets which also appear as *Draw* files on the CD so they can be altered to suit.

The drawings are easily good enough to convey the message, but don't take ages to render on screen which makes it especially suitable for use on a school's network.

The disc features three 'walk-ins' whereby the user can follow a map and at various key points, locate some pictures of the local area.

Creative Curriculum Software can be contacted on (0422) 340524.

Exploring Nature (£125)

If there's to be a prize for the best Key Stage 2 CD, this gets my vote. It has superb illustrations and is highly motivating.

I saw a pre-release version back in January which contained several errors, and sadly one minor error is still present on the final version, but this doesn't really detract from the CD as a whole.

Indeed, the accompanying documentation is of an equally high standard as the contents, and this CD should be in every primary school.

Hampshire Microtechnology Centre can be contacted on (0705) 378266.





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REVIEWS

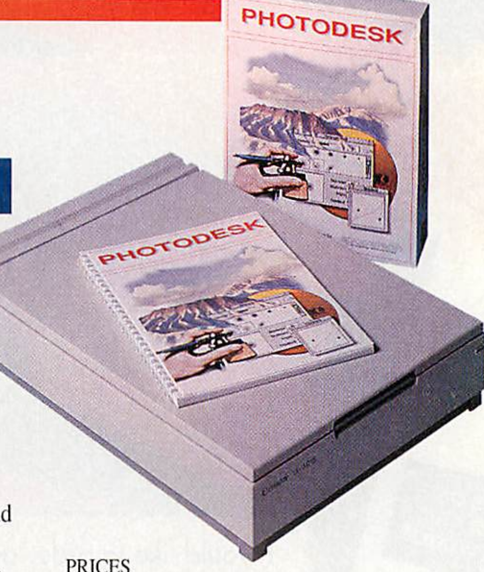
"The images rendered by the 360dpi engine leave the HP DeskJets standing."
Acorn User

"This is a very impressive package and is worthy of our Best Buy rating."
Archimedes World

"Overall this is an extremely impressive printer and coupled with Computer Concepts' TurboDriver, represents the best colour printing system to appear on Acorn computers so far."
Acorn Computing

Colour Solutions

ScanLight Professional Colour, PhotoDesk & the Canon BJC-600



COLOUR SCANNING

The IX-4015 is Canon's new A4 flatbed 24-bit colour scanner. It offers scanning resolutions up to 800dpi in full colour or 1200dpi in monochrome. The scanner itself is very compact and offers fast scanning speeds. This is a SCSI based device which works with all fully Acorn compatible SCSI cards.

PHOTO MANIPULATION

For manipulation of the image at a professional level, Computer Concepts have chosen Spacetech's PhotoDesk, a 24 bit painting and photo retouching package, worth £198 in its own right. PhotoDesk offers a wide range of advanced image manipulation features, such as 8-bit masking, pressure sensitive airbrush tool etc.

The package also includes scanner drivers and an interface lead for existing SCSI cards.

A4 COLOUR PRINTING

The BJC-600 is a full colour A4 inkjet printer from Canon, which offers high quality colour printing at an affordable price.

The quality is a result of the 360 dpi print resolution (that's 40% more dots per inch than a 300dpi printer) and the use of four separate colour ink cartridges. The special 'fast dry' inks help prevent ink spread on plain paper - and the use of plain paper ensures low running costs. The BJC-600 has a built in 80 page sheetfeeder and comes with a one year warranty. The package comes with the ultra fast 24 bit colour TurboDrivers, a user guide, colour documentation guide, all necessary cables, sample inkjet transparencies, DOS and Windows drivers.

PRICES

BJC-600 & TurboDriver:
£389.00 + £10 p&p + VAT (£468.82 inc)
hard disc recommended.

ScanLight Professional colour & PhotoDesk:
£749.00 + £10 p&p + VAT (£891.82 inc)
a fully Acorn compatible SCSI card required.
Works on all models of Acorn RISC computers with 4MBytes and RISC OS 3.1.

A suitable SCSI card can also be supplied for an additional £150.00 + VAT (£176.25).
PhotoDesk can be purchased as a stand alone package for £169.00 + VAT (£198.57 inc).



Computer Concepts Ltd

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Multimedia hardware

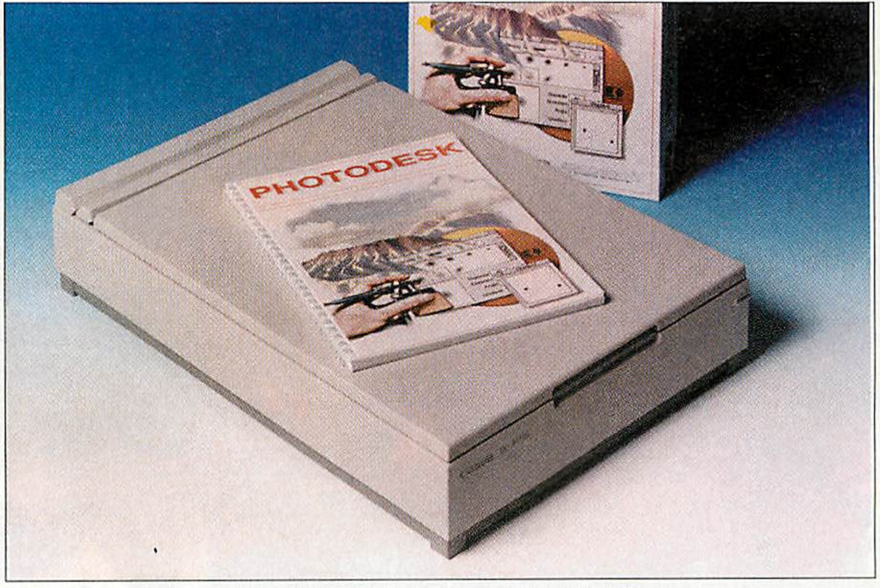
Geoff Preston looks at the best in multimedia hardware

Multimedia is the buzz-word of the moment. But what do you need to create multimedia presentations? Last month John Woolard looked at software, and this month I'll be looking at bits of hardware to help create that masterpiece.

Sonamara High Band Genlock Adapter (£355)

A Genlock card enables you to overlay computer graphics onto a video recording. The Sonamara is currently the only external Genlock, so does not require the computer to be opened. This is a particularly good product which produces very high quality images.

Details can be obtained from Sonamara on (0626) 873763.



Computer Concepts' new 24-bit colour scanner, complete with *Photodesk*

Canon Ion Camera (prices from £235)

CSH is now selling the basic kit for under £235. The camera takes photographs and stores them on tiny 2in floppy discs.

Each disc will hold 50 photographs which can be viewed on a television set by plugging the interface into the aerial socket, or pictures can be digitised and stored on your Acorn computer as a sprite.

Cambridgeshire Software House can be contacted on (0480) 467945.

Hawk V9 Mk2 Video Digitiser (£199)

A video digitiser will accept signals from a suitable video source which may be a television set, a video camera or from the Ion camera mentioned earlier.

This interface board with its software will give good results without any particular skill, but if you want to spend a little time fiddling, you can make some significant improvements to the picture.

The resulting picture can then be loaded into any program which will accept sprites. Wild Vision can be contacted on 091-519 1455.

Scanners by Computer Concepts (from £189)

Alternatively you can scan pictures from a photograph using either a hand held or flatbed scanner. Computer Concepts' hand held scanner, Scanlight 256, gives 256 shades of grey and will scan a picture about the size of a postcard.

More expensive is an A4 flatbed scanner which is available as a 256 grey-level scanner (£499) or the recently introduced 24-bit colour version (£749).

Although expensive, the colour scanner includes *Photodesk* from Spacetech, which is worth over £150. Computer Concepts is on (0442) 63933.

Black Box Sound Sampler by Focus IT (£29.95)

This is a simple and cheap product which gives great results. The kit comprises a microphone, an interface and a disc.

The microphone is plugged into the interface and the software is loaded from the disc. Sounds, which could include speech, are saved as either *Armadeus* or *Tracker* files, or alternatively can be saved as relocatable modules which can be played by issuing a star command.

It records at 12MHz so the quality is remarkably clear. Focus IT can be contacted on (0274) 618774.

Multimedia for its own sake?

I can imagine teachers wondering why there is a great push to use CD-Rom and multimedia in classrooms. Well, the multimedia systems are going into schools to aid teachers and pupils in what they are doing now.

But don't listen to me, listen to what Martyn Wilson, General Inspector for IT in Hampshire, said at the launch of the Horizon Project report. In explaining what schools in the project had done he said 'Using multimedia in the classroom with children:

- improves the accuracy of their work
- raises their confidence
- leads them to economy of words and improved style
- helps them to link ideas effectively
- provides them with a sense of audience, giving them a framework within which to write for a purpose
- clarifies their thinking
- aids collaborative working
- helps them to view information as not just linear
- makes children more concerned to complete work
- sing multimedia aids the development of good literacy.

'Of course, once you have multimedia systems in schools, you can also use them to develop the New Literacy our children will need.'

Roger Broadie, Education Marketing Manager, Acorn Computers Ltd

Schools' competition

Enter our schools' competition and win yourself prizes galore, learning in the process

Last year's *Acorn User* Schools' Competition was a great success even though it was restricted to the schools around Harrogate, the venue of the *Acorn User* Show.

This year we want to make it even better by opening the competition to all UK schools – and hopefully attract some entries from overseas. There will also be a category for Sixth Form/College/Polytechnic/University students.

Each entry should come from curriculum-related work, so need not require any extra work from the school other than to complete the application form and to post off the entry. This year, we're giving a lot more time for schools to prepare their entries.

What yo have to do

We want you to create a complete A4 page for *Acorn User* magazine. By complete, I mean everything including the text, the headers, graphics and layout. The winning entries will feature in a future issue, either in the magazine itself, or on the cover disc.

Entries may be submitted in any Acorn native text processor. *Impression* (*Publisher* or *Style*), *1st Word Plus*, *Pendown*, *EasiWord*, *EasyWriter*, *Wordz*, and *Ovation* are all acceptable.

You can even do it in *Edit* and *Draw* if you wish, but you may not use a PC program via an emulator or PC card.

The text can be made up of either one single story or several stories, but must be on an Acorn-related theme. Therefore, entries could be from a single student, several students contributing to one article or several students each writing their own small article.

The content of the stories could be a write-up of a school-based project, how your school's Acorn computers are used in lessons, how a school magazine was produced, in fact anything as long as there is a clear Acorn link. Product reviews will not be acceptable.

Your finished page must include two relevant graphics – one bitmap (sprite), the other vector (*Draw*, *ArtWorks* or *Vector*). The bitmap could be a screenshot or part of a screen, the vector graphic must be original and not a piece of clip art. The important words here are *relevant* and *original*.

It is unlikely you'll own the exact fonts used in the magazine, but to ensure everyone has a fair chance all competition entries must be in 10pt Trinity Medium for the body text and 24pt Homerton Medium for crossheads (the subtitles which appear inside the main body of text). The only other fonts permissible are variations on Trinity and Homerton.

Categories and entry

There are four categories:

A: Primary School up to 11 years of age (Key Stage 1 and 2)
B: Secondary School 11-14 years of age (Key Stage 3)
C: Secondary School 15-16 years of age (Key Stage 4)
D: Sixth Form/College/University 17+ (as long as you are in full-time education)

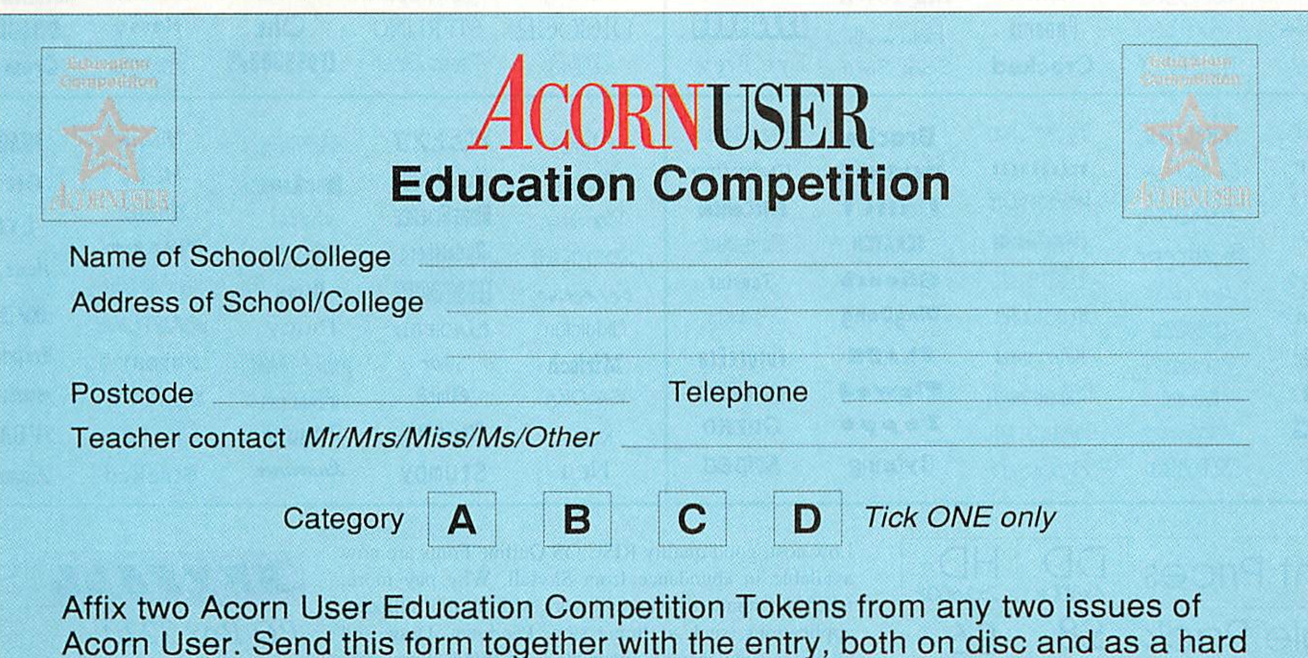
Entry is limited to one category per school. The entry must be on the official form at the bottom of this page and must be accompanied by two star tokens from the *Acorn User* Education Page. Star tokens will be printed most months.

Closing date

Entries must be sent to the *Acorn User* office at any time during March 1995. Winners will be notified by post and the prizes will be awarded at the 1995 *Acorn User* Show.

Prizes

We have got some excellent prizes for the winners and runners up. The list of prizes is growing and more details will be given in future issues.


ACORN USER
Education Competition

Name of School/College ____________

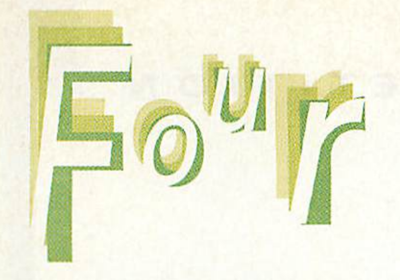
Address of School/College ____________

Postcode ____________ Telephone ____________

Teacher contact Mr/Mrs/Miss/Ms/Other ____________

Category A B C D *Tick ONE only*

Affix two Acorn User Education Competition Tokens from any two issues of Acorn User. Send this form together with the entry, both on disc and as a hard copy, to reach us by 31st March 1995.



Four Hundred Fonts



1

Classic, Orange, Columbia, ALGERIAN, Itali, Select, Hardcase, YOUNG, Old English, Citric, Garden, Amber, Acorn, STENCIL, SPLODGE, TECH, BALLOON, Raven, STOP, Cybernoid, Buckingham, MegaType, Schwarz, THEATRE, Cooper Black, Gangster Bit, Bolt, Palatino, Oxford, Reiner, Friendly, Chicken, Jotter, Ladybird, Milton Keynes, Lazy, Koch, Swizz, Trio, Baskerville, Park Avenue, Brush Script, Jayne, George, Dubiel, SOLID, Σνμβολ, XRMMh It

2

POST CRYPT, Fox Script, Ricksaw, Cuneï, Murder, Oregon, TERMINATOR, Psychadelic, Thalia, Laser, Andromeda, FLINTSTONE, METRO LINER, Square, CAVEMAN, Jumbalaya, Future, LED Style, Graphic, Alison, Informal, Architect, El Garrett, Chasline, Chinese, Charlie, Canaith, Kathlita, Phaedrus, Heidelberg, Borzoi, Gordon, Video, Daytona, Sweet, Windsor, Caligula, Jackson, Цирилиц, EDDA, BUBBLE, New, TOY, China Town, SNYDER, ESPHERES, DEUSEX, STRONGMAN, PONCHO, Black

3

MULTICOLOR, SIMPSONS, HIGH SCHOOL, RED SQUARE, DRAGON, Mushy, CLUMSY, KICK OFF, american, RACKHAM, Juliet, Rechtman, Broken, Camelot, Lauren, My Words, Henry, King William, NotePad, UPPER WEST, Romeodn, Faktos, Hot Shots, ICED UP, Science, ZALESKI, Cairo, TRIBE, DRAIN, Mardi, CUSTODION, Oak Wood, Duncan, Micro, LICHTNER, WEISS, РУССКИЙ, TAX, QUIZ SHOW, Koshgarian, Good City, annie, SPURS, POINT, GRUAMAN, Junk Funk, Apollo, USA, KRAMER

4

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5

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6

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7

DownWind, After, ApexRix, EDGED, Brighton, Camberic, COMB, CROSSCRACK, Upright, SKILINE, SpikeStripe, ZapOpen, SysError, UnderLine, unwhite, Vancant, Void, WetPaint, White, HappyHour, HEADBANGER, HorrorPlus, HOTEL, NLQ InkJet, Knotted, Nicked, ROMANBLANC, SCORED, Brocks, Ballet, SCRATCH, Cheers, DingDong, FLASH, Flawed, Zeppo, Cyborg, EireOpen, ENGRAVER, EricContor, Exposed, Faustus, Freely, FutureEra, GLASSLITE, GREKO, Striped

8

Always, BlancBoy, CompUni, Defective, Middleton, Mirisch, ISADORA, Kelvin, Neu, MERRY, HotFood, MoreScience, Rudelsberg, HISTORIC, Shot, Odie3, Oregon Wet, Stumpy, cheese, Dashing, Dirty, PIGGY, WHITESPARK, InSilicon, Jagger, Laurance, Minster, Mister, Oldie2, PAPERCLIP, SCRIPTLINE, Spoted, Stroked, MESOZOI, Oliver, LYNX, Home Away, LOOP DE LOOP, Serpentine, SPRAYED, ZEBRA

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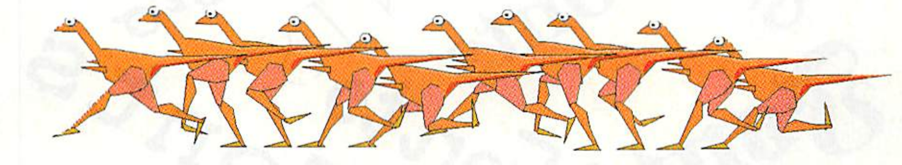


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Looney toons



Mark Moxon looks at Iota's latest animation package, and decides it definitely deserves an Oscar

It's rare that a supposedly educational application comes along which is irresistible to everyone, not just teachers and pupils. Iota's *The Complete Animator* is such a treat: a package which has obvious and excellent potential in schools, but one which anyone interested in graphics will find a pleasure to use.

The Complete Animator is, as its name suggests, an animation package which enables you to create cartoons and moving diagrams. A considerable effort has been put into the application to make it very easy to use and, indeed, this review was done using just a pre-release version of the software, without a manual: you don't really need one, the design is that clear.

However, one of the most important aspects of the complete package, which will be available by the time of the Acorn World show in October, is the inclusion of a 30-minute video, made by professional animators. The video is truly inspirational – judging by the pre-edit version I saw – and shows just what can be achieved with animation. Watch the video, and you'll look at animated TV adverts in a whole new light.

Easy and powerful

Animator is simple to use, but it is also powerful. The essential concept behind the package is the creation of a sequence of pictures, which are shown in succession to make a film. This sequence is edited in a window with a number of tool icons; you can decide which tools appear, enabling you to edit the application for less experienced users.

The drawing tools are comprehensive enough to create quite sophisticated animations, but if you prefer to use *ArtWorks*, *Draw* or any package which produces sprites, then you can import the file into any frame. You can copy frames, create blank frames, copy areas of frames, draw lines, circles, rectangles, erase areas, type in text and so on.

A notable feature, and one which improves the usability of the package no end for those used to tool panes is that tool dialogue boxes can be 'torn off' and permanently positioned on screen.

Stamps are useful; you can create stamps in *ArtWorks*, *Draw*, or using the copy block tool, and can 'rubber stamp' them onto any frame.

Another great feature – and one which shows how good the interface is – is that you can instantly scale and squash any stamp just by holding down Shift and moving the mouse. You don't have to mess around with scale factors, just change the shape: simple.

Other drawing tools are the pipette – which sets the pen colour to whatever is under the pipette pointer – and the flood fill, which has the unique feature of showing the area which will be filled before you actually fill it; this is one feature that professional art packages should look at including.

Another feature of *The Complete Animator* is the inclusion of sound. Sound effects can be tagged on to any frame, so when that frame is displayed, the sound is generated.

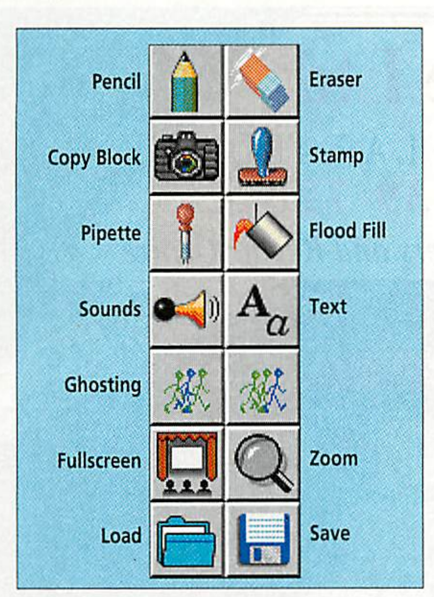
Loads of sounds are included with the package, but the easiest way to include your own sounds is via samplers like Oak Recorder, which is supported: you just record your sound and include it in your film. Adding sounds makes your animation come alive, but its application is not just for fun. A recording of someone talking over an animation increases the educational value of the animation by a considerable amount.

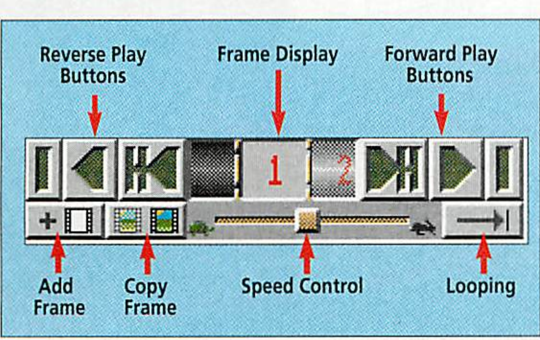
The other important aspect of *Animator* which is only available in considerably more expensive packages is ghosting. Turning ghosting on shows the previous two (or next and previous) frames as ghost images on the current frame so, for example, if you are plotting a moving ball in your film, you can easily judge where the ball should be in each frame.

Conclusion

The Complete Animator is just that – it's a very powerful, yet highly usable package which is suited both to schools and to anyone interested in playing with graphics.

And at under £100, including an excellent video, it's great value. Needless to say, it's highly recommended.





The toolbox (top) and play icons (bottom)

Product details

Product: The Complete Animator
Supplier: Iota Software
Tel: (0223) 566789
Price: £49.50 inc VAT, special half-price offer at Acorn World
Normal RRP £99 inc VAT

£3.00 CASH BACK WITH ANY PACK PURCHASED FROM

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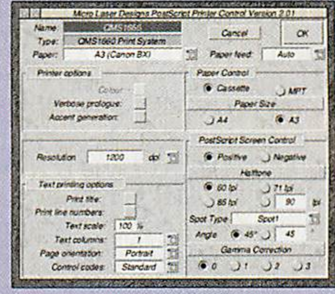
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Club corner

Chris Jackson goes five rounds with CD Circle

In the past few years, CD-Roms have become very popular in the PC market: the worldwide distribution is over ten million, and is increasing rapidly.

The CD-Rom is a perfect platform for the distribution of large applications like IBM's OS/2, and also for today's mega-games like Virgin's *Seventh Guest*.

A PC fitted with a CD-Rom drive, combined with a SVGA graphics adaptor has become *the* top-end games machine to have.

As always, volume sales have forced prices down, and recently the CD-Rom has been seen increasingly in the Archimedes market.

Although the CD-Rom is not quite an everyday Archimedes device, it has become a popular way of distributing applications like *ArtWorks* and *Revelation* and games such as *Simon the Sorcerer*, and often the CD-Rom version of a package is much enhanced because of the vast amount of space available.

One thing lacking from the Acorn market was a CD-Rom users group, but if you read the letters page in the May issue of *Acorn User*, you will have seen a letter from the Archimedes CD Club (now called CD-Circle).

The club has been up and running for a number of months, and offers some great facilities to people who own CD-Rom drives, such as discount price CDs from PC and Mac manufacturers.

Many of you who do own a CD-Rom drive will know that a lot of the files on PC CDs won't work on the Arc because of incompatibility problems, but CD-Circle has been working on an application called *Readers* which will convert images, music, voice, text and video files so you can view them from the desktop using its *MMViewer* application.

I have seen a beta version of these applications, along with some example files, and I was very impressed by the quality and speed of both.

Money wise

The *Readers* and *MMViewer* applications come with most of the CDs which require their use, and the club has negotiated with PC CD manufacturers to supply their CDs at reduced prices.

Since 24-bit colour entered the Acorn scene with the launch of the Risc PC earlier this year, Photo CD has become a new subject for all to talk about.

So the club has arranged discounts with Corel – the maker of *Corel Draw!* – to supply its massive collection of 140 Photo CDs, which cover a wide range of subjects, for only £30 each (inc. VAT and postage) which is a saving of £10 on the usual RRP of Corel's discs. Archimedes software on CD isn't neglected either, and the club has negotiated discounts with companies such as Computer Concepts and Longman Logotron, so members can buy *ArtWorks* and *Revelation* CDs at reduced prices.

To qualify for these discounts, you must become a member of the club, and the CD-Circle has arranged three different plans which will cover a wide audience, from beginner to CD freak.

The prices in the box show the different plans for subscriptions. For members with the occasional interest, and who would like to have access to 250Mbs of PD, plan one would probably suit them best.

For members who often use multimedia applications (for example schools), plan two would most likely be the best choice, and the last option is really suited to the serious CD user.

The club is interested in members who write their own applications; they can help to put masterpieces on CD for everyone to admire.

Overall, I think the club is a very good idea and am thinking of joining myself. The discounts and services offered to members far outweigh the annual outlay, and if you own a CD-Rom drive, I would recommend that you seriously consider joining this club.

I would be interested to hear from any Acorn clubs north of the border, and if you would like your club to have a hearing on this page, you can contact me on the Digital Databank BBS on (0707) 323531 (8N1, upto 14k4) as user #473, or you can send mail to The Club Page, Acorn User, Europress Publications, Europa House, Adlington Park, Macclesfield SK10 4NP.

Prices

All prices include VAT and postage.

Plan 1

PD CD One and six bi-monthly catalogues: £37.50

Plan 2

MMViewer + Readers + CD with pictures, text and video + six bi-monthly catalogues: £55

Plan 3

PD CD One + Plan 2 (above): £75

C for Yourself

This month in our C series, David Matthewman shows how to add, subtract, multiply, divide and generally mess about with variables

I hang my head in shame. Two issues ago I wrote a piece of sample code which started:

```
hyp = x**2
```

I don't know what language I thought I was writing in, but it certainly wasn't C. In C, there is no 'raise to the power of' operator, so it certainly isn't ** which has a totally different meaning.

So, if you can't raise **x** to the power of **y**, what *can* you do with variables in C?

Well, you can add, subtract, multiply and divide them, bit-shift them, bitwise AND, OR and Exclusive OR them, compare them and assign them values.

Variable types

Last month's article described some of the variable types available in C. Broadly, these fell into three types: character, integer and floating point.

Character variables are to all intents and purposes byte-long integer variables.

Integer variables can either be signed or unsigned, and both integer and floating point variables can come in a number of sizes.

You must bear this in mind whenever you perform arithmetic upon two variables of a different type, although most of the time C sorts everything out automatically.

You will run into problems if you attempt something foolish, such as converting -1.37253 into an **unsigned int** variable, or a **double** into a **float** variable too small to contain it.

Certain operations which work on a number binary digit by binary digit, such as bit-shifting, only make sense when applied to integers, as floating point numbers do not have a standard binary representation. Such operations can therefore only be applied to integer variables.

Because compilers may not all treat negative numbers in the same way, it is also wise only to apply them to unsigned and positive integers.

When performing operations such as adding two or more variables, the variables may have different types.

C automatically converts the variables so that they have the same type before performing the addition (or whatever). C does this according to a series of rules which can be summarised as follows.

Firstly, all 'small integer' variables like **char** and – in some implementations – **short int** are 'promoted' to **int**. This ensures that the variables in the expression at least have the range of **int** variables.

All variables are then converted to the highest type present in the expression, where the types are (highest first):

long double
double
float
unsigned long int
long int and **unsigned int**
int

Whether **long int** or **unsigned int** has a higher precedence depends upon the compiler.

Normally this conversion shouldn't worry you, with the notable exception of division which will be covered later.

Remember that you can force the conversion of a variable from one type to another by *casting* it – prefixing the variable with the type to which it is to be converted in brackets – as was explained last issue.

Binary operators

The easiest operators to understand are those which take two variables (which may also be constants, of course), and perform an operation on them, yielding a result.

These are called *binary* operators. Addition, subtraction, multiplication and division are the most familiar of these, and are represented by **+**, **-**, ***** and **/** respectively.

There is an added subtlety with division; if both variables are integers the result is also an integer, whereas if one is a floating point number then so is the result. For instance, the expression:

```
1/x
```

will be the reciprocal of **x** if **x** has the type **float, double**, or **long double**, but will be either zero or one otherwise.

```
1/(double)x
```

will always be the reciprocal of **x**, which is more likely to be what was intended. The expression:

```
x%y
```

gives the remainder of **x** divided by **y**. Both variables must in this case be integers, otherwise the concept of a remainder obviously makes no sense.

Integer variables may be bit-shifted, which in a binary representation is equivalent to a multiplication or division by zero.

Right-shifting is represented by >> and left-shifting by <<. Hence:

```
a=4; b=1;
c = a>>b;
d = b<<a;
```

will put a value of 2 in **c** and a value of 16 in **d**. It is safest to right-shift only **unsigned** integers, otherwise the compiler may either include the sign bit in the shifting or ignore it.

Bitwise OR, AND and EOR of two variables is performed by the |, **&** and ^ characters respectively.

For a given binary operator **op**, there is a shorthand way in C of writing:

```
var1 = (var1) op (var2)
```

which is:

```
var1 op= (var2)
```

Not only is this shorter and neater, it can help the compiler generate more efficient code.

An example of this is the following line of code, used to mask off the last byte of an integer:

```
integer &= 0xff
```

which ANDs the integer with 255.

Precedence

In an expression:

```
x = y + 5 * z
```

the C compiler needs rules as to whether to do the multiplication or the addition first. All the operators have a 'precedence' or ranking, and those with a higher precedence are evaluated first – in this case the multiplication.

Any expression in brackets is evaluated first. The operators described here have the following precedence (highest first):

~, ++, --, unary +, unary -
*, /, %
binary +, binary -
<<, >>
&
^
|
op=

In an expression containing many operators of the same type, the operations are performed from left to right, except for the unary operators and those with the form op=, which are evaluated from right to left. Hence:

```
i = j * k * ++~(float)f
```

is equivalent to:

```
i = (j * k) *
(++(~((float)f)))
```

The *Precedence* program on the cover disc sets up a number of complicated expressions, and then prints out the results. Try to work out what the results should be before running the program. There is a compiled version of the program also on the disc, for those without C compilers.

Unary operators

There are a number of unary operators which operate on a single variable or constant.

The ++ and -- operators, placed either before or after a variable, increment or decrement the value of the variable and may be used as a command on their own, as in:

```
i++;
--counter;
```

However, they can also be used as part of a larger expression, in which case their positioning relative to the variable is significant.

If they are after it, then the variable is incremented or decremented *after* its value is used; if before it, then the value is incremented or decremented *before* its value is used. Hence:

```
a = 1; b = 1;
c = a++;
d = ++b;
```

leaves **c** with a value of one, and **a**, **b** and **d** with values of two.

Other unary operators are concerned with various forms of negation. The - operator is a simple minus operator, which negates the value of a variable.

There is also a + operator which does not change the value of a variable – very useful, that one.

The ~ operator produces the 'one's complement' of the variable's value. It is a bitwise NOT operator which converts each one-bit in a variable into a zero-bit and vice-versa.

Lastly, the | operator is a logical NOT operator which returns zero if the variable is non-zero and one otherwise. Hence, if **x** has a value eight (binary 1000):

+**x** is eight
-**x** is minus eight
~**x** is a bit pattern, with ones everywhere except the fourth bit from the right which is a zero
|**x** is zero.

If **x** has value zero:
+**x** is zero
-**x** is zero
~**x** is a bit-pattern with ones everywhere
|**x** is one.

Assignments

The assignment operator = is almost too obvious to list, and we have used it freely in the series so far without explaining its syntax. However, it is important to note that:

```
x = 2;
```

is not only a statement, it is an expression with value 2. This is different from Basic, where it effectively has a 'value' **TRUE**, and has two important consequences.

Firstly, it permits constructions of the form:

```
x = y = z = 100;
```

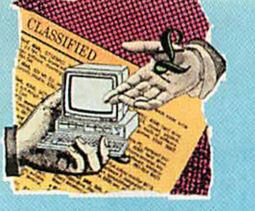
which sets each variable to 100. Secondly, the = operator cannot be used in comparisons. For instance in:

```
if (i = 20)
```

the brackets will *always* give a value of 20, which is taken to be **TRUE**, and **i** will end up being set to 20 in the process.

This is not *usually* what is intended. When we look at **if** statements, we will see that the == operator should be used for testing for equality.

Next issue we will venture into the territory of arrays and pointers, two very different ways of looking at the same variable type.



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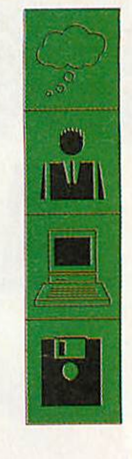
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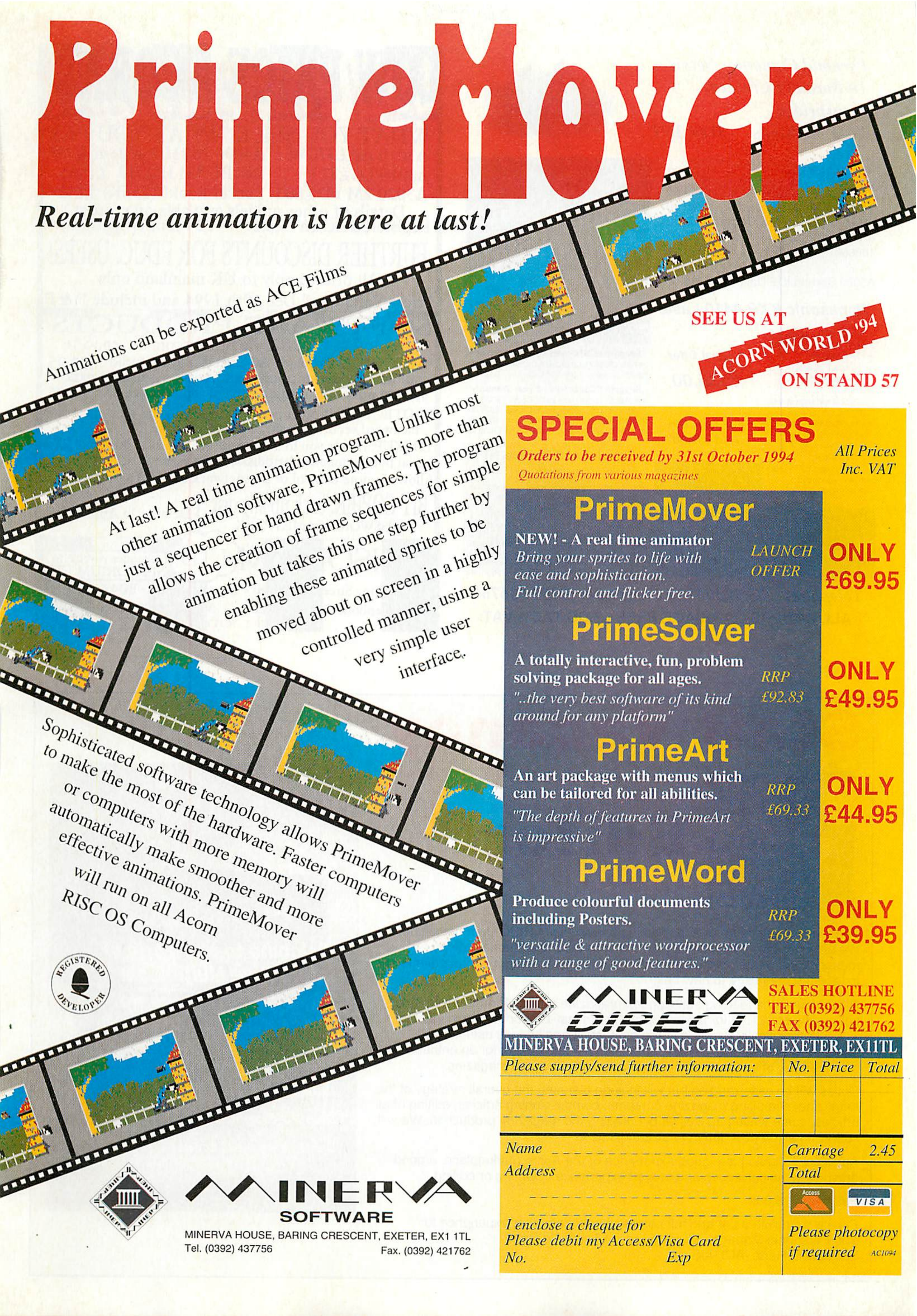
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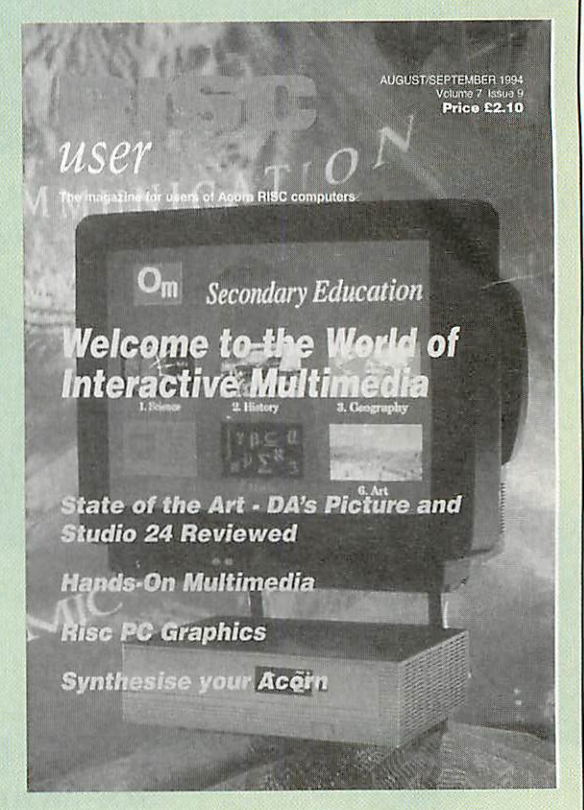
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QUESTIONS & ANSWERS

Games on the Risc PC, Bulletin Boards and Risc PC boot files

Q I was one of the many people to be impressed by Acorn's new machine at the Harrogate *Acorn User* show this year, and I am planning to replace my A3000 with a Risc PC this Christmas.

However, I am not sure about the compatibility of the Risc PC regarding existing Archimedes software.

I have a large collection of software, both games and serious programs, which I hope to be able to use on the Risc PC. However, I have read that the AKF60 monitor supplied with the Risc PC can only display non-multiscan modes – such as 12 and 15 – in letterbox format.

As most Archimedes games use mode 13 displays, I presume that these will be in letterbox format as well. Are there controls on the AKF60 to stretch the screen upwards and eliminate this letterbox?

I am also worried about the speed that games will run on the Arm600 compared to my lowly Arm2. Will I have to increase my reaction 15-fold, or do games run at Arm2 speed anyway on the Risc PC?

I was planning to use the (excellent) PD utility *ArcTools* with its routine to slow down computer operations, but this would be a very messy way of solving the problem.

I am also hoping to connect a modem to my computer soon, but I am not very familiar with comms.

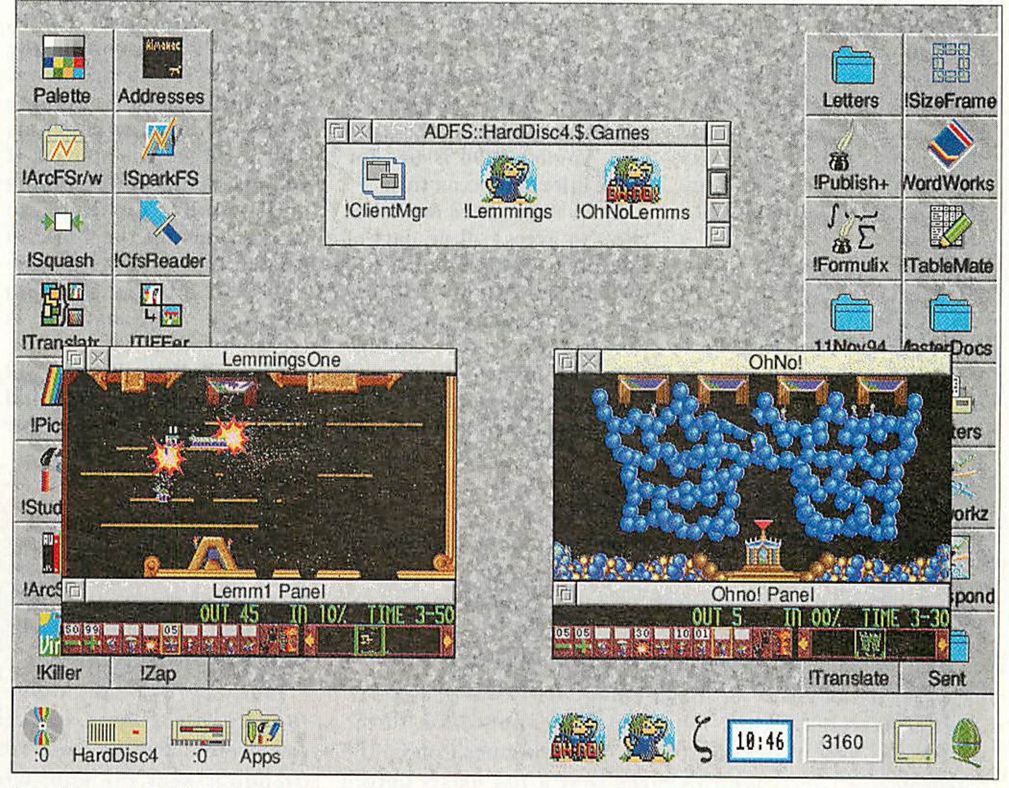
I am puzzled about some of the jargon, for example what is Demon?

Terminology aside, I do not know which bulletin boards I am allowed to access, or if I am meant to register to them.

Can I just dial up a bulletin board and download software to my computer as I want? I have noticed that some companies and even individuals have e-mail addresses. How would I access these?

I would be grateful for any help you can offer on the above, even if it does look like an attempt at the record for the most questions asked.

Andrew Buckingham
Birkenhead



Lemmings and *On No! More Lemmings*, Risc PC-style

A **The question of games on the Risc PC is a more complicated one than just what shape screen they will run in and how fast they will run.**

It is true that both the 14in AKF60 and the 17in AKF85 monitors will only display mode 13 in a letterbox format. Although there are controls on both monitors to alter the vertical and horizontal scales, they are not quite up to the job of making mode 13 square.

The speed increase depends upon how the game has been written. Many games are designed so that on an Arm3 machine they run at the same speed, but with more detail. Often they use a method of pacing the game which is independent of processor speed.

In others, you may find one aspect of the game – the display, for instance – runs at normal speed, while another – perhaps fuel consumption – races away at an unplayable speed.

However, the sad fact is that many games do not currently run on the Risc PC at all. It appears that the change to the Arm600 and the new internal architecture of the Risc PC has been too much for many games.

In some cases there are simple solutions. With some games, it is the *Tracker* music playing module that crashes, and if this is disabled then the rest of the game will run without a problem.

Software houses themselves are updating some of their software to run on the new machines.

For instance, Krisalis is releasing *Lemmings* and *Oh No, More Lemmings* for the Risc PC which, unnervingly, will run in a window in the desktop, and may both be run at once. Other Krisalis games such as *Swiv* and *James Pond* do not work on the Risc PC and probably never will, while *Populous* and *Speedball2* should work

with no problems.

Some light at the end of the meteor shower is provided by a new program called *Game On!* from The Arm Club. This program, written by Mark Smith, the author of *ArcFS,* and Andrew Flower, is a front end to allow games which do not normally work on the Risc PC to run. *Game On!* is not available at the time of writing, but should be out in time for the Acorn World show at the end of October. It promises to fix problems with many games that run on the Risc PC, but not entirely correctly, and also to allow older soundtracker and Coconiser players to run. For further information in *Game On!* contact The Arm Club on 071-624 9918 (fax 081-446 3020).

Where an update to a commercial game is relatively simple, a software house *may* offer a Risc PC-compatible version of a game as a cheap upgrade to existing owners. It is best to check this with software houses themselves. Risc PC versions of many of the most popular games should be on display at the Acorn World show in October.

As to comms jargon, there is a lot of it, but do not be put off. You will quickly learn the parts of the jargon which you need to know, and ignore the parts that you won't.

Demon, for instance, is the name of an Internet provider (Demon Internet Services), and you will only need to know this if you are planning to access the Internet directly using the *KA9Q* program – see the articles in the July and August 1994 issues for more information on this.

Even then, there are other ways to access all or part of the Internet. Bulletin boards, which offer a more friendly and hand-holding introduction to the world of comms, will often allow you to send and receive e-mail and to post news to selected Internet newsgroups, as well as providing their own versions of all the facilities offered by Internet.

In general, to access a Bulletin Board, just phone up. If there are any special conditions of use, you will usually be told at this stage what they are.

For Bulletin Boards, you will need a terminal program to 'talk' to the Board via the serial port. The two main commercial programs are *Hearsay* and *ArcTerm 7*, which will both run on the Risc PC with no problems, although there are some Public Domain programs which will get you started. If you are going to be sending mail and posting to newsgroups on the Bulletin Board to any extent, the *ReaderS* program from Anthony Frost is reccommended.

Many Bulletin Boards will require you to give your full address before they allow you access to all their features. This is to verify that you actually exist, and not usually to pass round to 50 mail order companies, so don't worry.

Bulletin Boards are friendly places, and the people on them are patient and helpful with newcomers. If you get told to 'go and read such-and-such a file', do so without feeling aggrieved.

There are long lists of FAQs (Frequently Asked Questions) on most Bulletin Boards with standard answers, and repeatedly asking questions which are in the FAQ list will cause people to lose patience quickly.

You can download software from most Bulletin Boards, subject to some restrictions which vary from Board to Board. You will very quickly run up a large phone bill doing this, so do watch how much you download, and how much time you spend on the Board.

Risc PC Boot files

!Boot on the Risc PC is very different from earlier machines. It combines *!System*, *!Scrap*, *!Fonts* and the *Configure* application in a complicated maze of files in the *!Boot* directory structure.

Central to the booting operations on the Risc PC are a number of utilities to be found in the *!Boot.Library* directory. In here dwell *AddApp*, which adds an application to the *Resources* filing system (accessible from the Apps icon on the icon bar), *IfThere*, which checks that a file exists before proceeding, and *Repeat*, which performs a * command on a set of files in a directory.

The last of these is very useful. For instance the command:

```
Repeat Filer_Boot Boot:Resources -Applications -Tasks
```

will boot all applications and tasks (Obey files) in the *!Boot.Resources* directory. This means that any applications put in this directory will be booted (but not run) on startup. *!System*, *!Scrap*, *!Configure* and *!Fonts* are kept in here.

When the computer is first switched on, the following happens:

!Boot.!Run is run. This loads in *Vprotect*, checks that it is running on a Risc PC, and sets up a load of system variables.

Two of these, Boot$ToBeLoaded and Boot$ToBeTasks point to the directories where tasks and applications that are being run before and after the Desktop is entered should be placed.

By default, these are *!Boot.Choices.Boot.PreDesk* and *!Boot.Choices.Boot.Tasks* for before and after desktop entry respectively.

Then, assuming that it is running outside the Desktop, as it will be if the computer has just been switched on, it runs the file *!Boot.Utils.BootRun*.

BootRun does all the pre-Desktop work. It repeatedly scans the directory pointed to by Boot$ToBeLoaded and RMLoads all modules, IconSprites all sprite files, runs all Obey files and also the *!Run* files of any directories in the Boot$ToBeLoaded directory.

Just before it does this, it runs the file *!Boot.Choices.Boot.PreDesktop*. This file is heavily commented, and the most likely part that you might want to change is near the end, where *AddApps* is used to add applications to the *Resources* filing system. *BootRun* then enters the Desktop, running the file *!Boot.Choices. Boot.Desktop*.

Desktop Filer_Boots *everything in !Boot.Resources and* Filer_Runs everything in the directory pointed to by Boot$ToBeTasks.

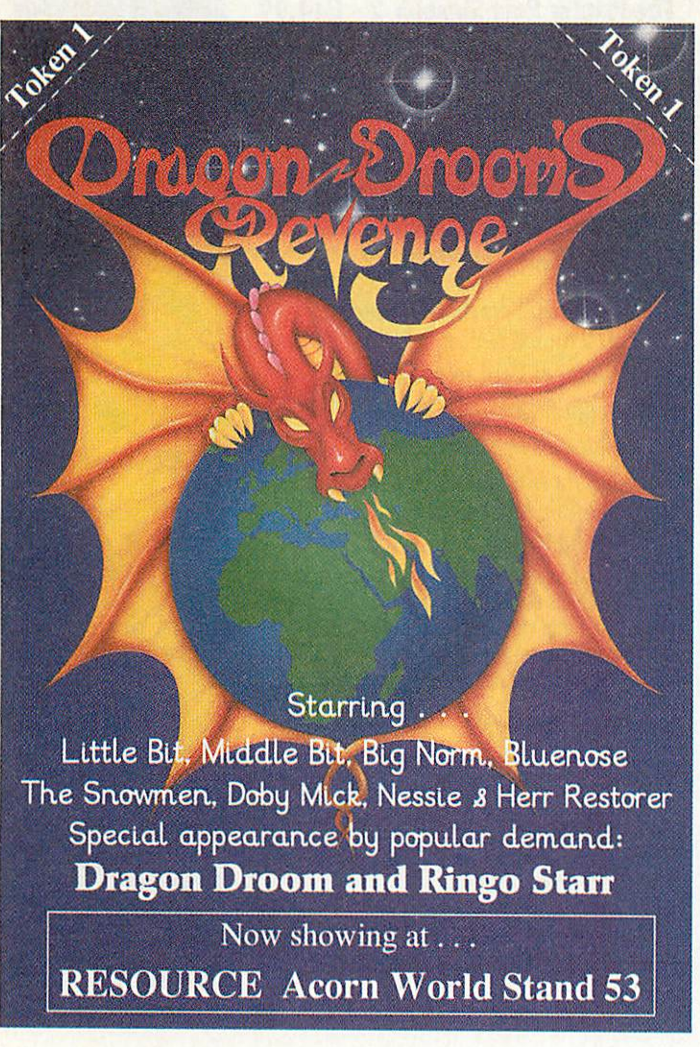
It is this file that you are most likely to need to edit substantially, as you will probably want to add lines to boot or run applications which you are not going to put inside *!Boot*.

In summary, the directories which are of interest are:

- *!Boot.Choices.Boot.PreDesk* where you should put modules, sprites, Obey files and applications which you want to run *before* entering the Desktop.
- *!Boot.Choices.Boot.Tasks* where you should put applications and Obey files which you want to run *after* entering the Desktop..
- *!Boot.Resources*, where you should put applications which you wish to *boot* after entering the Desktop.

And the file in the boot structure which you are most likely to want to alter is:

- *!Boot.Choices.Boot.Desktop* where you should put commands to boot or run applications which you do not want to keep in the above directories.



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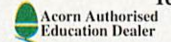
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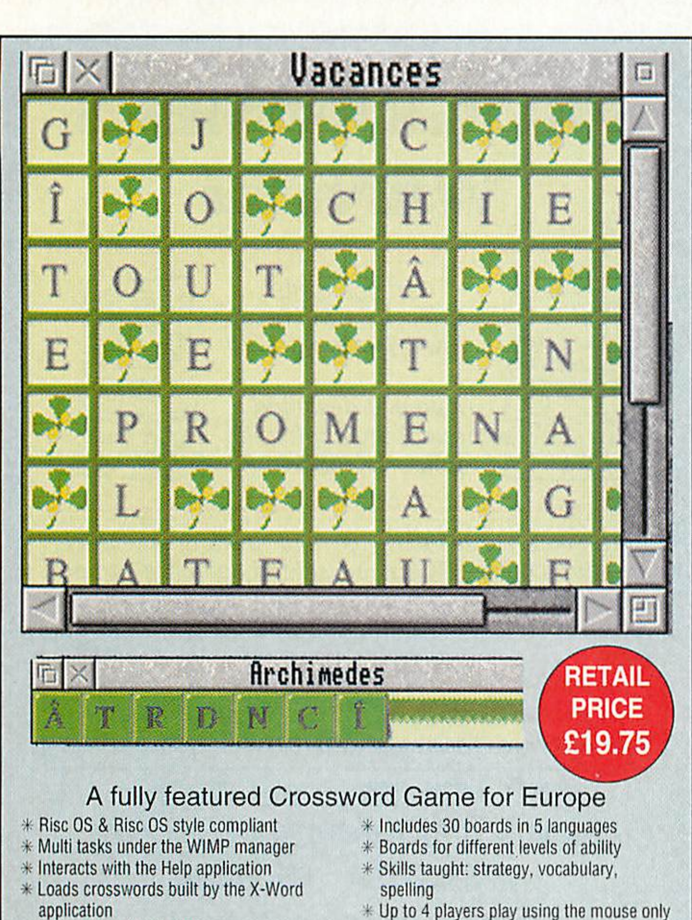


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Acorn Customer Hotline

Essential information for all Acorn Users, compiled by Dave Walker of Acorn Customer Services

Questions and Answers

How do I change into a 'Risc OS 3.1-style' screen mode on my Risc PC?

Click Menu over the monitor icon on your icon bar, and choose the 'Mode' option. If you delete the contents of the writable icon in this dialogue box with Ctrl-U, you can then type in the Risc OS 3.1-style mode number.

Most, but not all, of the Risc OS 3.1 modes can be accessed in this way.

How do I print in different fonts from *Edit*?

***Edit* will only produce hardcopy in the System font; if you wish to print text in a different font, you can save the text into *Draw*, change the font via the 'Style' sub-menu and print it from there.**

Serial ports, printers and modems – part 1

There are two main classifications of serial RS232 cable; straight-through and crossover. Generally, if the cable is linking the computer to a communications device such as a modem, then a straight-through cable is used – in other words, one where the transmit line is connected to the same-signal pins at either end of the cable, as is the receive line, and so on.

A modem is a piece of Data Communication Equipment (DCE); hence the straight-through cable is sometimes referred to as DTE to DCE.

If the cable is connecting the computer to a peripheral such as a printer, then the transmit line from the computer needs to be connected to the peripheral's receive line and vice versa; the two lines have to be crossed over.

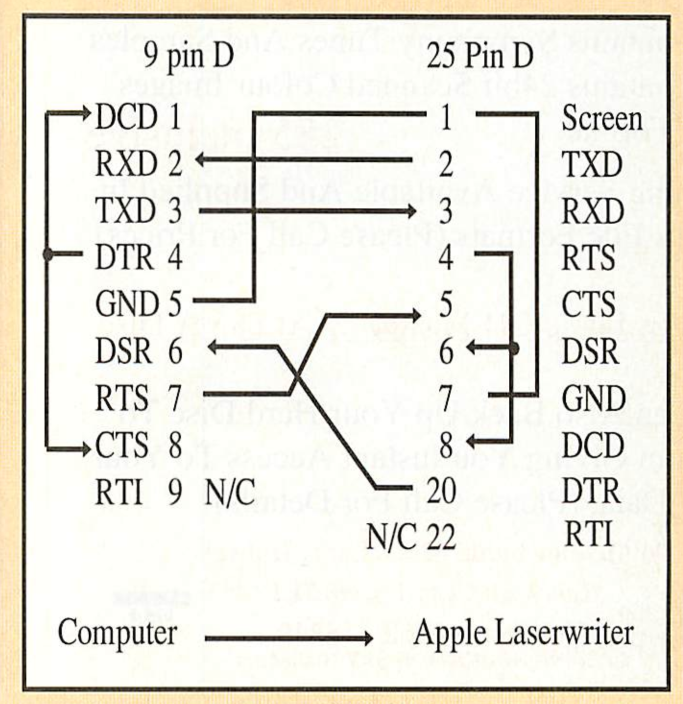
A printer is a piece of Data Terminal Equipment (the terminology goes back to the concept of a computer which had a number of user-interface terminals connected to it by serial lines), so the cross-over cable is sometimes referred to as DTE to DTE or null modem cable.

In the case of the Risc PC, you should be able to use a standard serial lead with a modem and suitable communications packages. For earlier machines, the package vendor should be able to supply a lead or information on where to obtain one.

Printers is capable of sending data to a suitable printer via a serial link – the printer usually has to be specially configured to receive serial data.

Your printer manual should show you how the printer's DIP switches must be set and which formats of serial word it will accept.

The figure shows a suitable cable to connect an Acorn serial port to an Apple LaserWriter; more serial communications information follows next month.



Connecting your Acorn to a Laserwriter using the serial port requires a so-called DTE to DTE cable, or null modem

Palette information on the Risc PC

Some applications, particularly those written for earlier versions of Risc OS, can be set to change the video palette information; this may cause unusual colour effects on the Risc PC Desktop.

As an alternative to resetting the machine, it is possible to restore the colours by finding a sprite which already has the default palette set; the palette information can then be extracted using *Paint*, and loaded. Rather than look for a sprite with the palette set, we suggest that you do the following before the need to reset the palette arises:

- Load *Paint*
- Click on the *Paint* icon
- Create a new sprite with a 16 colour palette set
- Open the menu over the 'newsprite' window, and move to the 'Save' sub-menu followed by the 'Palette' sub-menu
- Drag the Palette file to a suitable directory.

If you find that an application corrupts your current palette, double-clicking on this saved palette file should at least make the Desktop colours usable until you can save your work and reset. It might even be a good idea to keep it on the backdrop.



Whoops

I've been informed that a couple of errors slipped into the table in September's column.

The Risc PC/AKF85 combination can actually support 1280x1024 in four colours with no VRam, in 16 colours with 1Mb VRam, and in 256 colours with 2Mb VRam.



Upgrades

In order to use the A-Link on the Risc PC, you must be running a copy of *PocketFS* Release 2.

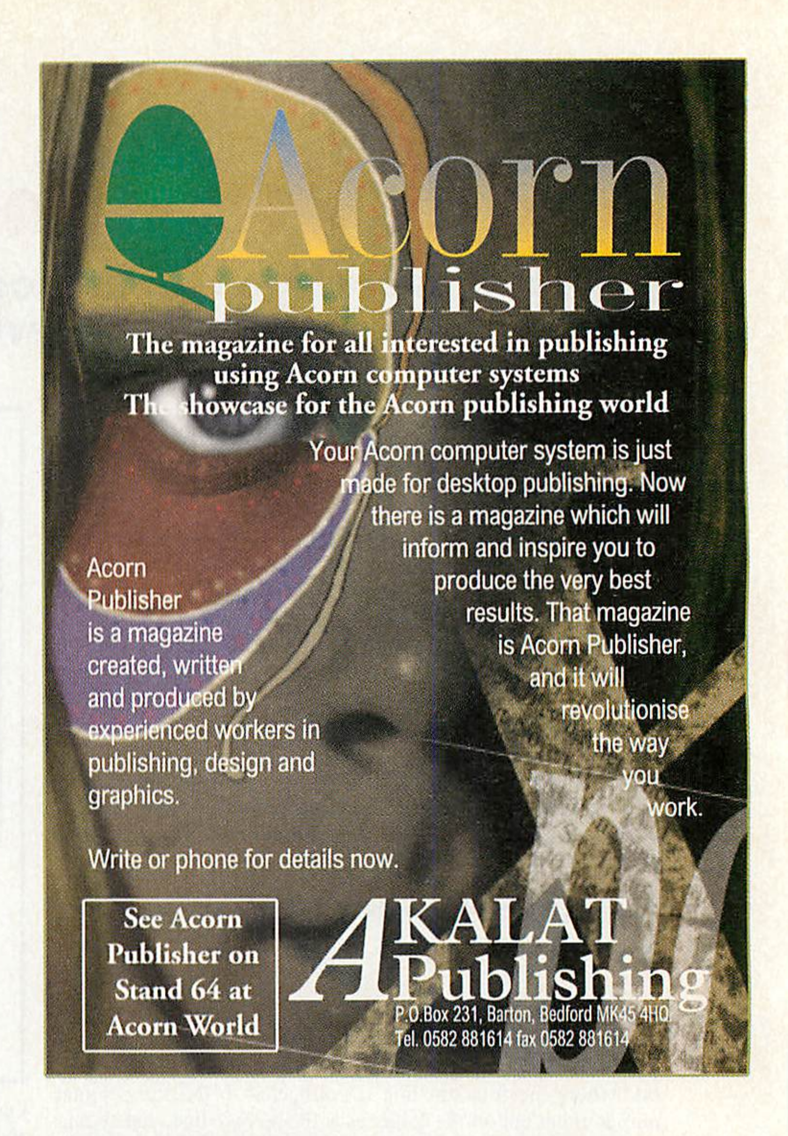
Upgrades from Release 1 may be obtained from Vector Services, 13 Denington Road, Wellingborough, Northamptonshire NN8 2RL by returning your original *PocketFS* disc, and a cheque for £9.95 inc VAT and P&P. Cheques should be made payable to Acorn Direct.

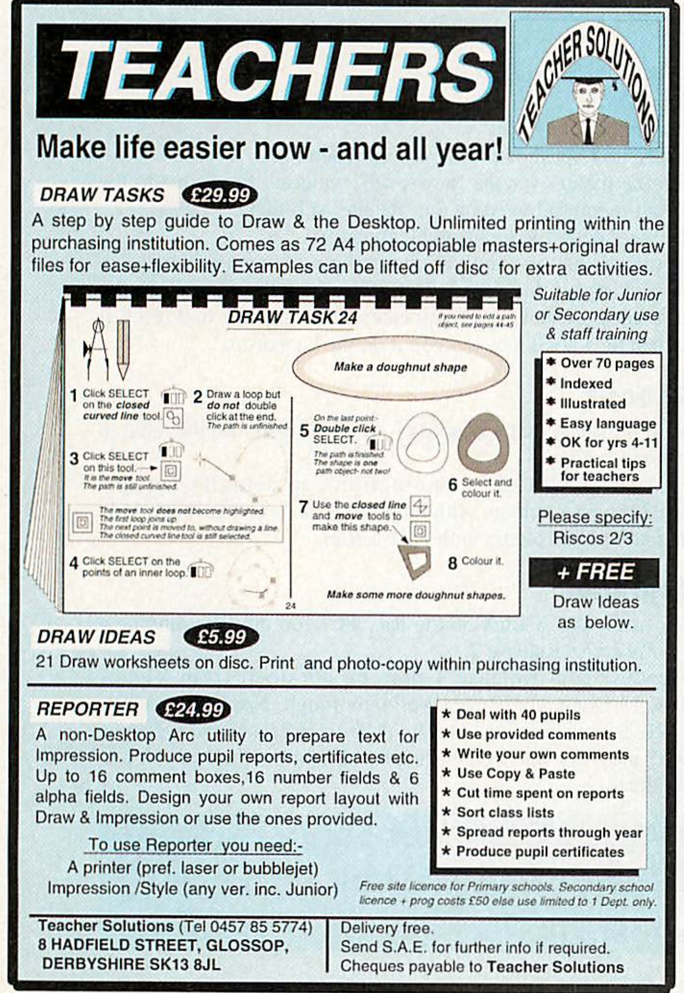


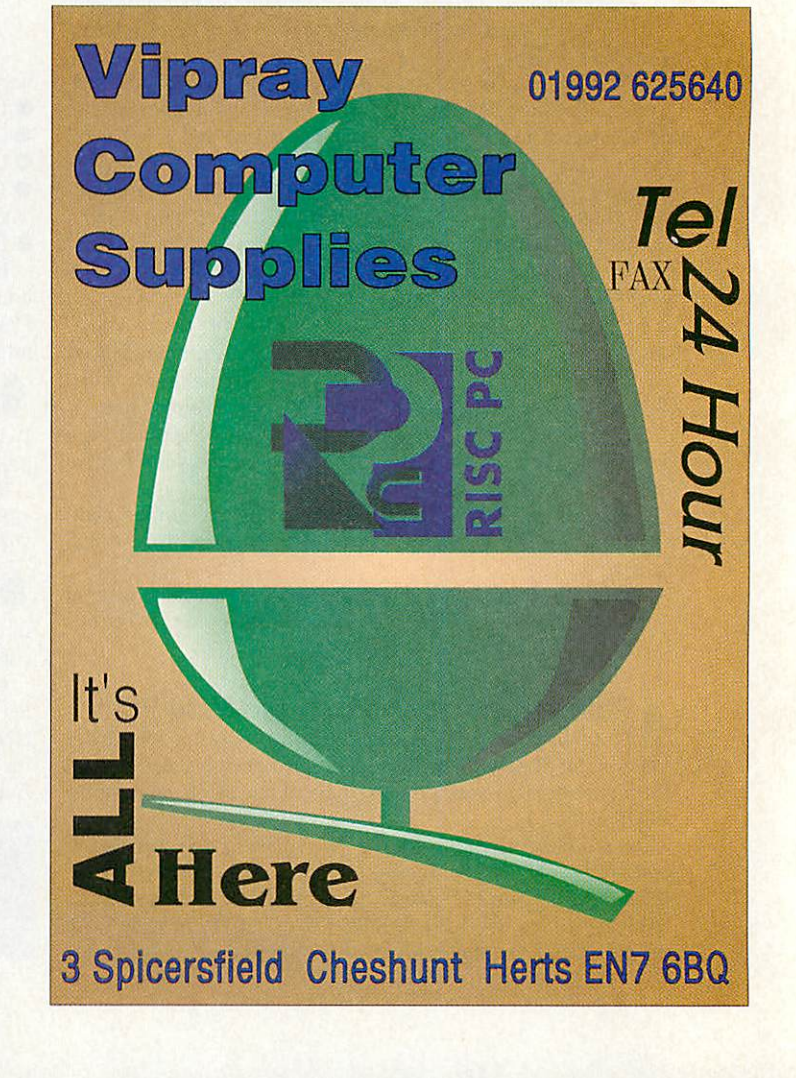
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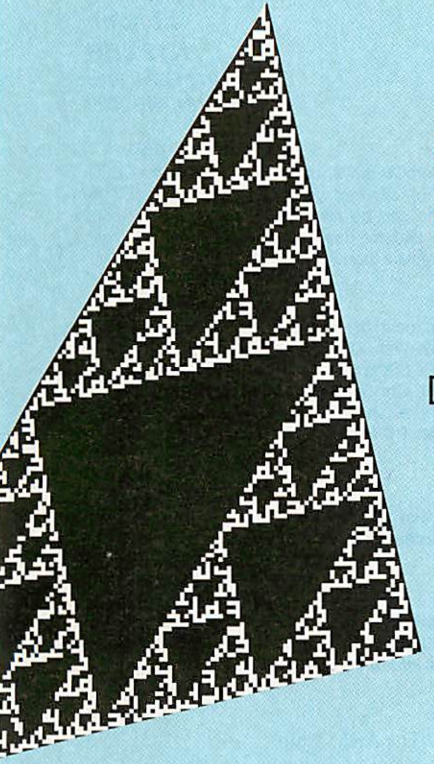

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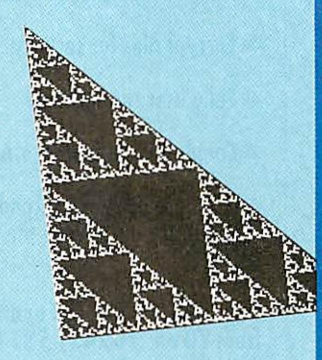

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2 Draw a loop but do not double click at the end. The path is unfinished
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The move tool does not become highlighted. The first loop joins up. The next point is moved to, without drawing a line. The closed curved line tool is still selected.
4 Click SELECT on the points of an inner loop.
5 On the last point - Double click SELECT. The path is finished. The shape is one path object- not two!
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*INFO

Dave Lawrence and Dave Acton continue their monthly look at programs, for all Acorn Users



Fast spin

Every so often someone sends us a really stunningly fast example of something we've covered previously. In this case, the programs are *SpinZoomF* and *FSierSpZoF* (well, that's what they called them) which were created by Ben Barnes and Alan Taylor, both at the University of Warwick.

FSierSpZof simultaneously generates, spins and zooms a variant of the Sierpenski triangle, all in real time. The user may control the zoom by moving the mouse left to right.

A little mathematical shortcut used for generating a Sierpenski triangle – the pixel value at any given point – may be calculated by ANDing its respective x and y coordinates.

But instead of defining a threshold level above which a point is black, and below which is white, eight bits of the remainder of the AND operation are used as the pixel value.

The plot routine is in machine code and the rotation and zooming calculations are performed in Basic without a significant loss of performance – it also allows the program to be easily tweaked.

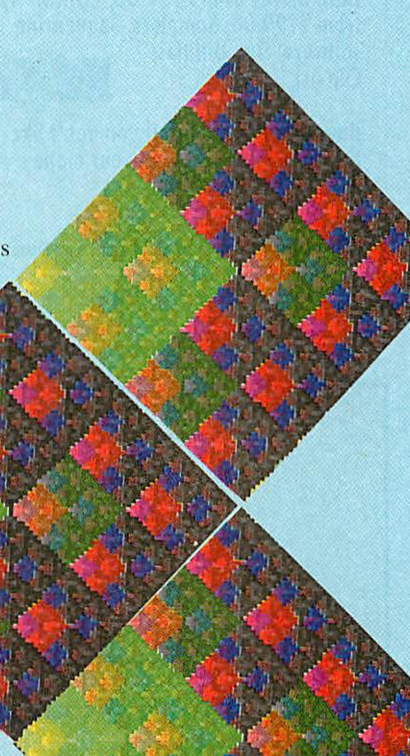
Some interesting effects can be seen by altering the expressions for **!wxy**, **!wli** and **!wdi**.

SpinZoomF was the result of trying to develop the Sierpinski routine. As is often the case, this little experiment turned out much better than the original idea.'

A little while after sending their creations in, we received updated versions which actually went even faster than the originals.

By 'unwrapping' the main loop, the demos now run at about 20 frames per second on a humble A3010!

Authors: Ben Barnes and Alan Taylor



Musical youth

This is an application lovingly hand crafted by Simon Morris for that rare breed of ageing programmers who remember when they first heard that generic piece of music called Thriller, Newsong, or Sweet Dreams way back in '83 and marvelled that such compositions were possible from a humble Beeb!

Merely out of nostalgia and in an experimental test to see if they would sound any better on an Arc (they don't!) I've lovingly prepared a selection for your viewing pleasure.

You may well cringe. You also may notice that I've not spent a lot of my time with this illicit pastime, and most of the programs have remained in much the same format as they were on the Beeb, save for the necessary tweaks to the SOUND commands.

Perhaps there may be someone out there with a similar attack of boredom who is macho enough to tackle the Daniel Pugh (CCL4) format – that is, one note, one envelope. Something like that. If you do try this at home kids, make sure you do it better than I did.

This application was created on an A5000 and has not been tested on any other hybrid Acorns. Due to my lack of any documention concerning Basic V, I'm afraid that the implementation of sound throughout these tunes was accomplished mostly by trial and error, and I'm sure it could have been done better. That's my excuse.

Right then. That's it. Load up a tune and hug your Beeb. After all, if it wasn't for the Beeb Acorn would have no money (hmmm) and you wouldn't have an Arc. So come on people now, smile on your brother.

Simon had sent us about a dozen or so more, but due to lack of disc space we could only carry three . . .

Author: Simon Morris

Another filter tip

Following last month's desktop filter modules, we felt inspired to write one of our own and explain how we went about it. We must warn you though that the following paragraph does contain one word of strong language. People of a nervous disposition may like to take a deep breath before continuing...

One of the only nice features of PC Windows (there now, I've said it) is the ability to resize windows by any corner or side. Risc OS does now 'grow' windows up and left if you move the resize gadget off the screen, but most of the time a drag of the title bar and then resizing the window is needed.

Our filter, imaginatively called *Resizer*, allows you to resize the *top left*-hand corner of a window by dragging the title bar with both Select and Adjust.

To install the filter simply double-click (or RMRun) the Resizer module; to remove it type ***RMKill Resizer**. You can check that the filter is installed by typing ***Filters**. This lists all the filters currently running – you should see Resizer among the list.

Now you should be able to click Select and Adjust over the title bar of a window and try out the filter. If you click Adjust first, the window will remain in the same place in the window stack (as expected).

Note, you will be able to move the mouse all around the screen, unlike normal resizing which restricts mouse movement so you cannot shrink the window too small or too large.

Making the window smaller than it wants to be will push the bottom corner away from you. Likewise, making it larger will appear to perform a standard window move.

In both cases though, the bottom right-hand corner will try and return to its original place when the window is dragged to a more comfortable size. The strangest result of this 'feature' can be seen when resizing filer windows 'too narrow' – try it and see.

How resizer works

We covered the basics of the filter SWIs last month, but went no further. The source code of Resizer can be found on the cover disc, and we'll run through it now so you can get the idea of writing filters.

Dragging the title bar of a window issues an **Open_Window_Request** each time the window moves. This is returned by **Wimp_Poll** to the application.

What we want to do is step in at this point and force the bottom right-hand corner of the window to stay in the same place.

We therefore want to add a filter *after* **Wimp_Poll**, but before the application – a *post* filter.

We also want to it be called on **Open_Window_Requests** so we need to provide a mask with bit 2 clear i.e. indicating we *don't* want **Open_Window_Requests** to be ignored.

The call to install the filter can be seen in the **.initialise** part of the source code. R0 points to the filter name, R1 to the code, R2 is the value of R12 (which is not relevant as this module has no workspace), R3 is the handle of the task to which the filter is applied – in this case, 0 indicates 'apply to all tasks'. Finally R4 is the required mask as per **Wimp_Poll**. The code in **.finalise** just removes the filter.

The filter itself starts at **.filter_code**. Remember this is called on return from **Wimp_Poll** so R0 will contain the event type (only 2 in this case as we have only asked for **Open_Window_Requests**).

R1 points to the wimp control block and R2 contains the task handle (which we don't need). We can (and will) modify the contents of the block at R1 and change R0 to provide a different event if needed.

We can even stop the application from receiving any event by setting R0 to -1. In all cases though, we must exit with R1 and above unchanged and the status flags intact.

When the filter code is called we know that an open window request has happened and we call **Wimp_GetPointerInfo** to find out what mouse buttons are being pressed and over which icon.

Assuming *dragging* is 0 for now (which it is to start with) we first check the icon number (-4 means 'title bar'), then check if both Select and Adjust are being pressed and exit if either are not.

We now flag that we are dragging the window. We then call **Wimp_GetWindowState** to tell us where the window was (remember that the wimp block that was provided by **Open_Window_Request** tells us where the window has moved to).

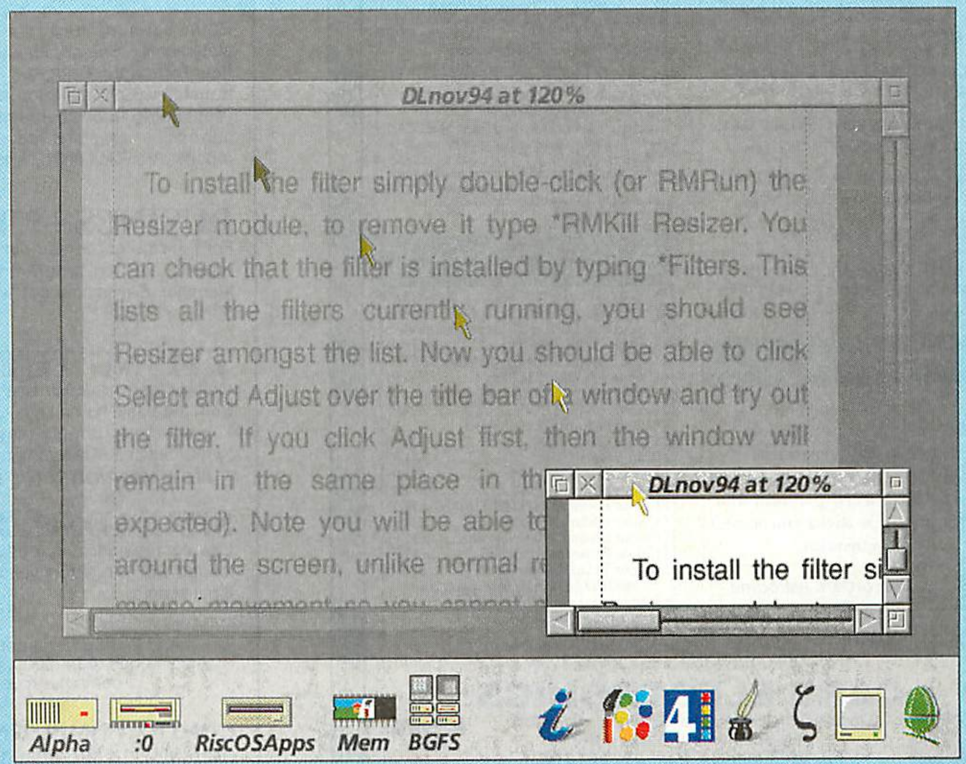
Note, we have to retrieve the original R1 passed to us off the stack. We extract the co-ordinates of the bottom right-hand corner and store them locally (**xmax** and **ymin**) and then exit normally.

Next time the window is moved, *dragging* will be true, so the code at **.do_drag** is called. This forces the entries in the **Open_Window_Request** block back to the original co-ordinates of the bottom right-hand corner.

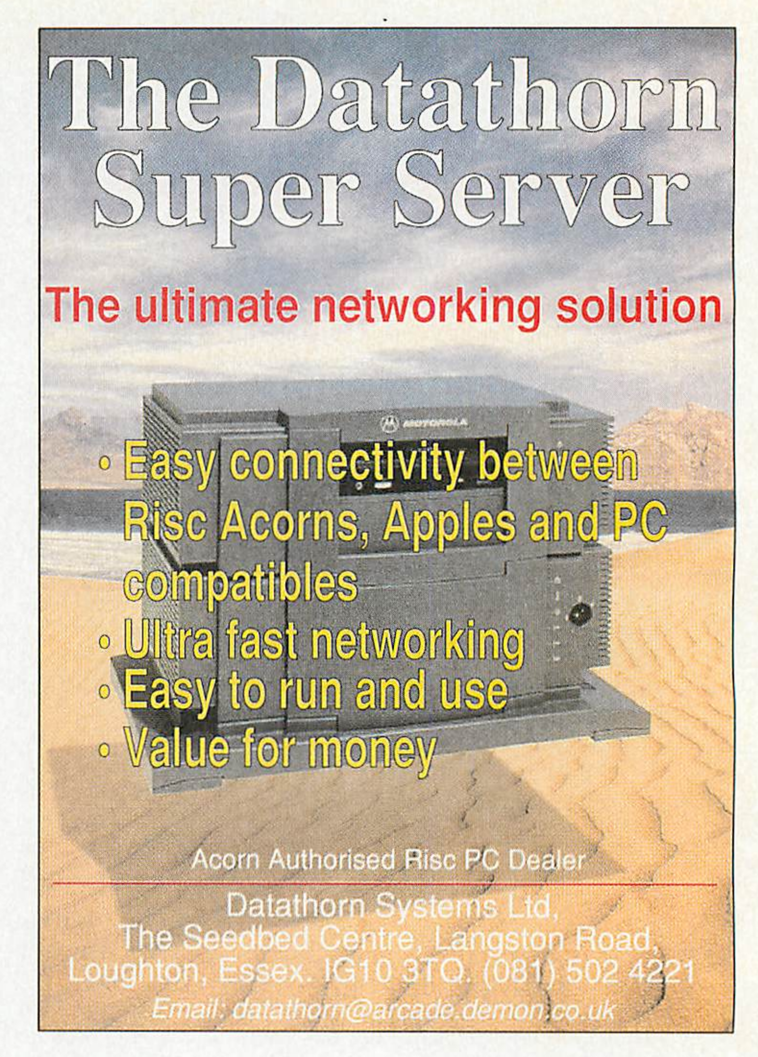
Finally a check is made to see if you are still holding any mouse buttons. If not, *dragging* is zeroed to indicate the resize has been completed.

Note that the check is for a zero return, so it is not actually necessary to hold both mouse buttons down for the entire drag. Also note though that because the filter has been applied to **Open_Window_Request** and not **Mouse_Click**, Select and Adjust are only detected once the window has moved, so clicking both buttons but not moving the window, then releasing a button will not give you the expected resize.

Author: Dave Lawrence







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Big sounds

You must know by now that we're suckers for chaotic equations and fractal-like patterns – we can tell by the number of them you send in.

Thomasina stuck out above the rest and we thought it well worth including. Mark Ainsworth is the author and we'll leave it to him to explain.

'The patterns are based on a simple algorithm that I came up with, in conjunction with a friend of mine, Peter Barnes. We have christened these strange forms *Barnes-Ainsworth* curves, though it could be the case that this is not a new discovery in the world of chaos mathematics.

'Peter had the original idea, and was inspired by the play *Arcadia* by Tom Stoppard, in which he is an actor, and in which a girl (called Thomasina) speaks of: "A wonderful new method whereby all the forms of nature must give up their secrets and draw themselves in number alone."



'The idea in the algorithm was that it would not converge or diverge, so as such would be chaotic (though in some cases the curve can settle down to an oscillating set of points), but then again, is this what inspires Ralph Steadman?

'When you run the program, you are asked what values you want for a and b – values are best round about 1. For an example of a curve that oscillates, try a=0.375, b=0.679. Alternatively just press Return which generates suitably-ranged random values.

'Then it asks you for the speed setting. Again, just press Return for the time being (this gives the normal setting). Whenever a point is to be plotted, that pixel is checked for its colour, and then re-plotted one level of darkness lower.

'This is effectively a sort of anti-aliasing, and is particularly suited to the way the curves come out (where there are some places that get a very high proportion of the points plotted), and shows the beautiful intricacies of the pattern to far greater effect.

'This does mean that it can take a while for any image to appear. To take account of this, pressing + or – during plotting will decrease or increase the number of grey scales shown.

'However, the program still continues to work out the points incrementally to 16 levels of accuracy, so that all the extra detail is shown should you wish to turn the darkness down again.

'For further exploration of a curve, you should press a mouse button during plotting. You can now move the pointer about, and your position will be shown in the top-left of the screen. The location of the origin is also indicated on the screen.

'At this stage you can still alter the grey levels with + and –. You can also save the screen at this point by pressing S. A screen called *Thomasinax* will be saved to the CSD, with "x" being a number depending on how many screens you have saved so far in the program.

'To start plotting a small section of the curve, simply drag a box around that area by holding down Select. Note that the aspect ratio can be changed, depending on what shape of box you draw. When you release Select, plotting starts again.

'The number of grey levels will start off at a smaller number than before to allow for the fact that not so many are likely to be plotted on the same point, though + and – still work.

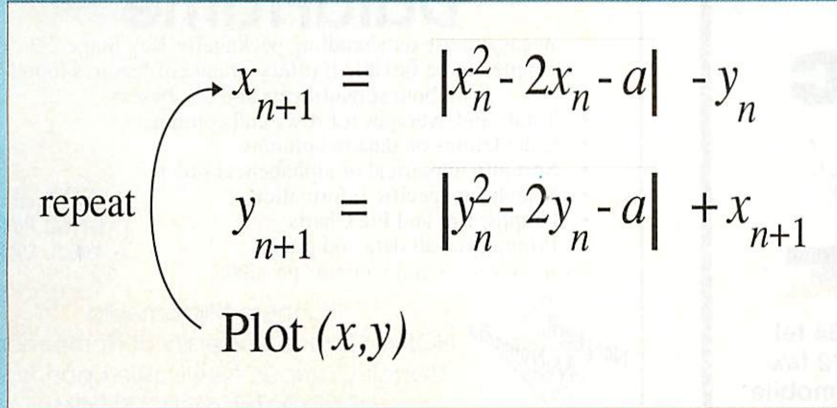
'The Info option was introduced to allow the user to see how the curve gets plotted. To this end, each time a point is plotted a line is briefly drawn between this and the previous point.

'This reveals that the points are usually plotted in a roughly cyclical manner (with 4 stages), and that is why on this option the coordinates of every fourth point has its own section in the top-left. Also, the location of the origin (0,0) is shown all the time under this option.

'This plotting option is very slow because one point is plotted in each screen refresh (ie. approx. 50 points/sec). The Fast option speeds up the plotting process by plotting pixels in black straight away. Typing ***RMFaster BASIC** can also speed up the program quite dramatically.

'Also included on the disc are a couple of plot animators and a program called *ThomasinaA*, which plots the curve in a slightly different way.

'Here, the program cycles through lots of points on the screen (from a grid-type form), and uses the algorithm a specified number of times to produce the points.



'This is probably made clearer if you run the program with the Info setting on and not more than four repetitions of the algorithm. Here a small circle indicates the starting point on the screen, and the final point plotted can be seen from the streak joining consecutive points.

'This program doesn't produce such nice images, but has some interest nevertheless, and gives a good insight into how chaotic the algorithm is.

I hope some mathematician interested in chaos mathematics may be able to tell me if the Barnes-Ainsworth curve is new or of any actual interest.'

Author: Mark Ainsworth

Colour printer test

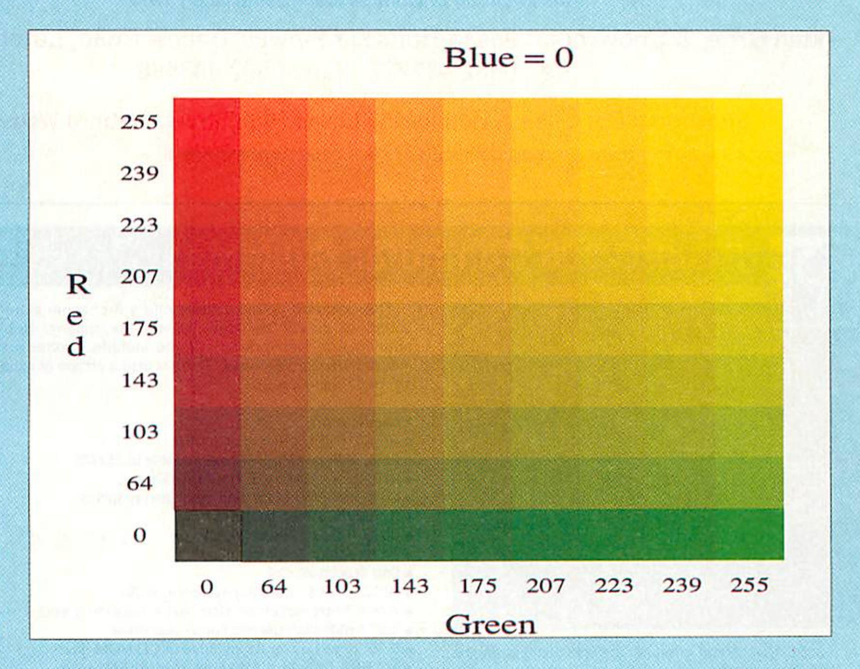
Regular Paul Marshall wrote this little Basic program to test his HP 500C colour printer. It creates a *Draw* file – *ColourTest* – which, when printed out, helps you relate the colours on paper to the RGB values in the *Draw* colour picker.

The program takes a selection of nine values in the range 0 to 255 and plots filled squares using each value in turn for the red, green and blue components.

The values are given in a DATA statement near the start, so they are readily changed for experimentation.

In this version the values are weighted towards lighter colours since the HP 500C requires gamma correction because it tends to make dark colours too dark.

Author: Paul Marshall



Single-task like a multi-task

Thomas Newcomb of Southport has come up with an amazingly clever little application that allows non multi-tasking programs to run in a window.

Edit provides so-called 'task windows' which are effectively text-only displays in which single-task programs can be run. Thomas's *SmallTask* redirects output to a sprite however, so even graphical ditties can be run in the desktop.

Obviously there are limitations. Mode and palette changes are not supported and direct access to screen memory is not allowed either (for obvious reasons).

Also, as you would expect, only one screen bank is allowed and mouse commands are ignored, except to read the pointer's position.

The mouse origin is the same as the graphics origin of the window. Simple graphic programs, and indeed programs which use legal means of producing graphics should work in a *SmallTask* window.

Use the icon bar menu to set up the sprite and memory slot for the next task. The menu is self-explanatory and includes an option to save the current 'screen'.

Incidentally, if you want to bring up the menu on a *SmallTask* window, do so over the title bar. Any mouse clicks over the window itself (including Menu ones) are simply passed to the task!

As an example, set up a sprite for a full mode 15 screen and drop Jan Vibe's *NeonPeak* demo (March 1994) onto the *SmallTask* icon.

Author: Thomas Newcomb

Easy keys

Two modules to ease your key problems from Michael Borcherds. *NumScr>f12* is designed for A4 portable users and its name rather tells you what is does.

Once installed, the Num Lock and Scroll Lock keys – which no one ever uses anyway, other than to flash the LEDs on and off when you're bored – become F11 and F12.

You can still use the keys for their original purpose if you really want to by pressing Alt with them. The only drawback with the utility, as Michael points out, is that a one-handed shutdown is no longer possible.

The module, which works by intercepting **EventV** and using **OS_Byte 202** to write the keyboard status byte, provides four * commands: ***NumLockOn**, ***NumLockOff**, ***ScrollLockOn** and, well, guess the last one.

BBCKeysMod works in a similar fashion to get around the slight differences in the positions of the 'Snapper' keys on the BBC and Archimedes.

Use the module to play favourites like Arcadians, Firebird and Dogfight under *65Host*. The module intercepts **OS_Byte 121** and **129** to reposition the standard up/down/left/right game keys and supports two * commands: ***KeysOn** and ***KeysOff**. Source for both modues is also on the cover disc.

Author: Michael Borcherds

Shutdown fix

Here's a quick fix for an apparent bug in Risc OS 3.1. We're told the bug appears when you try to shut down the computer (using Ctrl-Shift-F12) with two or more files open. This solution comes from Andrew Miles in the form of a module, which intercepts **Service_ShutDown** and closes all files.

Andrew says he has also uncovered a bug in RAMFSFiler, which apparently corrupts R1 during a **Service_ShutDown**, preventing the next module from receiving the call. This is also corrected by his module.

Author: Andrew Miles

*QUIT

All offerings, large, small, clever, pretty or even useless are always welcome. Send them to *INFO, Acorn User, Europress Publications Ltd, Europa House, Adlington Park, Macclesfield, SK10 4NP.

Name, address and program title on every disc please and include a text file containing same. An SAE ensures your disc's return. Also include whatever instructions, diagrams, examples and screenshots you can.

CD-ROM and Multimedia



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Oscar CD-ROM Drive

Dual speed CD-ROM drive – connects to parallel port on A3010, A3020, A4 and A5000 computers.

- Oscar CD-ROM drive – parallel £229

Bravo CD-ROM Drive

Dual speed CD-ROM drive – connects to parallel port or with SLCD interface.

- Bravo CD-ROM drive – parallel £299
- Bravo CD-ROM drive – A3000 £299
- Bravo CD-ROM drive – A5000 £299

Victor CD-ROM Drive

Dual speed SCSI CD-ROM drive, available as a single drive, or dual and quad speed versions with a SCD autochanger. Interface not included.

- Victor 402A CD-ROM drive £299
- Victor 632A CD-ROM drive £399
- Victor 602 - dual speed 6CD A/C £499
- Victor 604 - quad speed 6CD A/C £969

Indigo CD-ROM Drive

The ideal CD-ROM drive for the RiscPC. A dual speed unit that connects to the IDE interface (300i series). SCSI version also available.

- Indigo 300i CD-ROM drive–IDE £199
- Indigo 300iA CD-ROM drive–IDE £249
- Indigo 401 CD-ROM drive–SCSI £199
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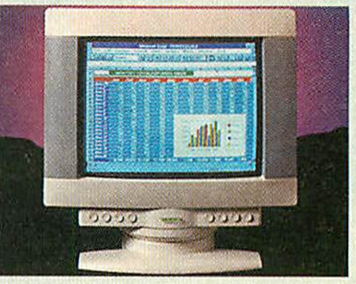
Accessories

- 8-bit SCSI Interface – A3000 £119
- 16-bit SCSI Interface – A5000 £119
- SCSI-2 Interface–A5000/RiscPC £199
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- SCSI-2 Interface cable £20

CD-ROM Software

Title	Price
Artworks	£129
Artworks Clip Art CD	£18
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Castles	£40
Changing Times	£125
Countries of the World	£40
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CD Francais	£120
Creepy Crawlies	£90
Daily Telegraph	£125
Dictionary of Living World	£175
Directions 2000 – French	£140
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Elements – Science series	£130
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Hutchinson Encyclopaedia	£49
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They're safe, easy to use and set up and excellent value for money. All models are low radiation and conform to the Swedish MPR II standard.

The 15" and 17" models are also EPA compliant, ideal for use with RiscPC which supports this type of monitor.

All monitors are supplied with connection cable with 15pin VGA connector. If they are to be used with an older Archimedes, a SVGA VIDC Enhancer and 9pin to 15pin adaptor will be required.

14" A-Scan Pro LR

- 14" non glare tube, 0.20mm dot pitch
- 1024 x 768 resolution @ 60Hz
- 29KHz to 70KHz horizontal frequency
- Microprocessor controls
- Low radiation MPR II standard

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- 15" FST tube 0.20mm dot pitch
- 1280 x 1024 resolution @ 60Hz
- 29KHz to 70KHz horizontal frequency
- Digital controls with LCD display
- Low radiation MPR II standard

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- 1280 x 1024 resolution @ 60Hz
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£499

25MHz ARM3 Turbo Card

Using the latest surface mount technology on a high quality 4 layer PCB, the ARM3 Turbo Card will increase the speed of your A300, A400 or A3000 computer by up to 6 times.

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Owners of A300 and old A440 models will require a MEMC1A upgrade to use the ARM3.

Buy ARM3 Turbo Card and RISC OS 3.1 upgrade for **£159**

Special Offer Price **£89**

Scan256 Scanner

Scan256 gives you up to 256 grey levels at a maximum resolution of 400dpi and is supplied with state-of-the-art software. This makes it the only sensible scanning and image processing solution for Acorn 32-bit machines.



The highly advanced software supplied with the scanner offers you many different image processing options, such as dithering, image enhancement, edge detection, brightness and contrast controls, plus many more.

Features include:

- Multiple copies of an image in memory at once
- Advanced image processing tools
- Convolution digital filtering with over 100 filters
- Adjustable scale & size during scan
- Save images in industry standard formats
- True brightness, contrast and gamma controls
- 105mm scanning width
- Ability to rotate and shear the image

- Scan256 for A300/A400/A5000 £129
- Scan256 for A3000 external £139

Archi A4 Scanner

The 216mm scanning width can cope with both desktop scanning of single sheets, photographs, etc, with its detachable sheet feeder, or used as an A4 wide hand scanner. 64 grey levels are produced from the scanner at resolutions up to 400dpi.

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Upgrade to Archi A4 Scanner

For existing users of the Archi MK2 hand scanner we can offer you an upgrade to the A4 Scanner for only **£129**

Fax/Modem Bundle

Now you can use your Archimedes computer as a fax machine. Prepare a fax, send it using the ArcFax software. Receiving a fax is simple - display on the screen or print out on any RISC OS printer.

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Model	Capacity	Access	Price
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ADA2360	170Mb	11ms	£219
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ADA2080	340Mb	11ms	£309
ADA2200	540Mb	10ms	£489

A300/A400 Internal IDE Hard Drives

Complete with interface, drive, cables and mounting brackets

Model	Capacity	Access	Price
ADA2010	250Mb	13ms	£199
ADA0580	340Mb	13ms	£229
ADA2030	420Mb	12ms	£269
ADA2210	540Mb	11ms	£329
ADA2340	1.0Gb	10ms	£649

A5000 Internal IDE Hard Drives

To replace existing hard drive, if required to be additional drive, 2nd drive kit will be needed.

Model	Capacity	Access	Price
ADA2050	250Mb	13ms	£159
ADA0880	340Mb	13ms	£189
ADA2000	420Mb	12ms	£219
ADA2220	540Mb	11ms	£279

A300/A400 IDE Hard Drives

Model	Capacity	Access	Price
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ADA1090	250Mb	11ms	£259
ADA2000	340Mb	11ms	£319
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Complete with 16-bit interface, drive, cables and mounting brackets

Model	Capacity	Access	Price
ADA2300	365Mb	12ms	£340
ADA2310	540Mb	11ms	£429
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ADA2330	2.0Gb	10ms	£1069

Cables & Accessories

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- A410/1 to 4Mb RAM upgrade £70
- A420/1 to 4Mb RAM upgrade £105
- A540 additional 4Mb RAM upgrade £249
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- A5000 4Mb to 8Mb RAM upgrade £259
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- RiscPC additional 16Mb RAM £499
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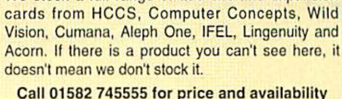
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Access







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Having brought you the most innovative handscanner back in 1992, we thought it was time to do it again. Following their success in the PC field, we introduce the award winning Aries Relisys flatbed scanners for the Acorn Archimedes and RiscPC. When you see the remarkably affordable price, you'll be sure to want one.

With the Aries Relisys scanner you'll open up a whole new world of possibilities. Imagine being able to scan a whole A4 size picture and in true colour. If you don't want the whole image, simply select the required area and scan again - the software will capture only what you want to see.

The Aries Relisys scanner is the perfect answer for anyone involved in desktop publishing (DTP) work that requires the ability to import graphic images easily, or import text via Optical Character Recognition (OCR) software.

There are three models to chose from - 1200dpi 256 greyscale, 1200dpi 24bit colour and 2400dpi 24 bit colour, and with prices starting from only £499, you can't afford not to have one.

The scanners are amazingly fast. Using the new industry standard TWAIN drivers and state of the art SCSII II interface technology**, you can scan a whole A4 page in 15 seconds (mono) and in minutes (24-bit colour).

All scanners come supplied with ImageMaster, a powerful image scanning/editing package, and a copy of Sleuth OCR software, enabling you to turn scanned text into a form that can be edited.

An optional 50 page document feeder is available for scanning long documents, and an adaptor to get the best results when scanning transparencies.

FREE Software

All Aries Relisys scanners come bundled with two FREE software packages.

ImageMaster

Scan your image and then use the powerful image processing and editing tools to get professional quality result

Sleuth OCR

Scan pages of text and turn it into an editable form, saving hours of typing.

(Minimum 4Mb RAM required to use scanner)

Accessories

- SCSI-2 Interface & Cable £159
- 50 sheet Auto Document Feeder £259
- Transparency Adaptor £295

Auto Document Feeder

Specification

- Capacity: 50 pages
- Paper size: 8.5" x 14" (max)
  5.0" x 7.2" (min)
- Paper thickness: 0.05mm to 0.15mm

£259

** as the Relisys scanner utilises a SCSI-2 interface, we recommend that you purchase the interface listed above to use with the scanner. We have found, when evaluating other interfaces that this one gives the best results.

SPECIFICATIONS

Model	ArcScan 3420	ArcScan 3520	ArcScan 2412
Scanner Type	Mono	Colour	Colour
Interface	SCSI-2	SCSI-2	SCSI-2
Scanning Process	Single Pass	Three Pass	Single Pass
Image Data - colour	N/A	16.7 million colours	16.7 million colours
Image Data - mono	256 Greyscale	256 Greyscale	256 Greyscale
Scanning Area	216 x 356mm	216 x 356mm	216 x 356mm
Optical Resolution	300 x 600dpi	300 x 600dpi	300 x 1200dpi
Maximum Resolution*	1200 x 1200dpi	1200 x 1200dpi	2400 x 2400dpi
Scan Speed - A4 page	10 secs	40 secs	26 secs
Brightness/Contrast	256 levels	256 levels	256 levels
Auto Document Feeder	ADF-30 (option)	ADF-30 (option)	ADF-30 (option)
Price	**£499**	**£549**	**£699**

* Resolution quoted is the maximum achievable using interpolation

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- EtherLAN Card - A3020 (BNC) £143
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- A4-1200 ArcLaser £985
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- Ultimate Vision Digitiser uPodule £69
- Ultimate MIDI uPodule £49
- Ultimate Analogue uPodule £29
- Ultimate ScanLight 256 uPodule £229
- External Floppy Disc Interface £10
- ST506 Hard Disc Interface £49

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- A300/400 Dustcover £9
- Archi Keyboard only Dustcover £6
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- A3000 Carry Case £10
- A4 Notebook Carry Case £35
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Archimedes Software

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- Aztecs £32
- Badger Trails £32
- Best Four Adventure £31
- Best Four Language £31
- Best Four Maths £31
- Bookstore Primary £33
- Bookstore Secondary £52
- Britain Since the 1930's £29
- Crystal Rain Forest £31
- Dreamtime £18
- Export, Trade & Industry £34
- Farm £15
- Fun School 3 - Under 5's £15
- Fun School 3 - 5 to 7's £15
- Fun School 3 - Over 7's £15
- Fun School 4 - Under 5's £15
- Fun School 4 - 5 to 7's £15
- Fun School 4 - Over 7's £15
- Fleet Street Phantom £22
- Geordie Racer 21£
- Investigating Maths £32
- Landmarks - World War II £21
- Landmarks - Egypt £21
- Landmarks - Rainforest £21
- Landmarks - Victorians £21
- Landmarks - Columbus £21
- Landmarks - Aztecs £21
- Landmarks - Civil War £21
- Linkword - French £32
- Linkword - German £32
- Linkword - Spanish £32
- Magpie 2 £49
- Nature Park Adventure £22
- Naughty Stories Vol.1 £37
- Naughty Stories Vol.2 £37
- Numerator £32
- Numerator Chaos Pack £18
- Podd £23
- Recall £32
- Sea Rescue £22
- Sky Hunter £21
- Stig of the Dump £18
- Space Mission Mada £22
- Through the Dragon's Eye £21
- Topographer £59

Discs

3M Diskettes - box of 10

- 3M 3.5" DSDD Discs £6
- 3M 3.5" DSHD Discs £10
- 3M 5.25" DSDD Discs £7
- 3M 5.25" DSHD Discs £8

Excel Diskettes - boxes of 10

- 3.5" DSDD Discs £6
- 3.5" DSHD Discs £6
- 3.5" DSHD Discs - coloured £7
- 3.5" DSHD Discs - box of 50 £22

Disc Storage Units

- DLC2 - holds 10 x 3.5" discs £2
- DLC4 - holds 10 x 5.25" discs £2
- DW1 - holds 6 x 3.5" discs £2
- DW2 - holds 6 x 5.25" dsiscs £2
- DW4 - holds 40 discs £5
- M40 - holds 40 x 3.5" discs £6
- M80 - holds 80 x 3.5" discs £7
- M120 - holds 120 x 3.5" discs £9
- M35 - holds 50 x 5.25" discs £5
- M25 - holds 100 x 5.25" discs £7

Disc Cleaning Kits

- 3.5" Cleaning Kit £4
- 5.25" Cleaning Kit £4

TO ORDER CALL OUR SALES HOTLINE 0582 745555
or FAX YOUR ORDER on 0582 488588

Access VISA AMERICAN EXPRESS

Printers & Accessories

Laser Printers

All Laser printers (excluding Hewlett Packard) include 12 Months On-Site maintenance

Printer	Speed	Price
Brother HL630	6ppm	£422
Brother HL-6V	6ppm	£456
Canon LBP 4i	4ppm	£477
Canon LBP-8 IV	8ppm	£920
Canon LBP-8 IIIR	8ppm	£1559
Epson EPL-3000	4ppm	£422
Epson EPL-5200	6ppm	£476
Epson EPL-5600	6ppm	£660
Epson EPL-7500 PS	6ppm	£1135
Fujitsu VM600	6ppm	£529
Fujitsu VM4	4ppm	£499
HP Laserjet 4L	4ppm	£459
HP Laserjet 4 ML	4ppm	£739
HP Laserjet 4P	4ppm	£595
HP Laserjet 4MP	4ppm	£856
HP Laserjet 4+	12ppm	£946
HP Laserjet 4M+	12ppm	£1268
HP Laserjet 4Si	16ppm	£2099
HP Laserjet 4Si MX	16ppm	£2999
NEC SuperScript 610	6ppm	£275
OKI OL-400ex	4ppm	£316
OKI OL-410ex	4ppm	£449
OKI OL- 850 PS	8ppm	£770
Panasonic KX-P4400P	4ppm	£335
Panasonic KX-P4401P	4ppm	£369
Panasonic KX-P4410*	5ppm	£329
Panasonic KX-P4430*	5ppm	£485
Panasonic KX-P4440*	10ppm	£768
Panasonic KX-P5400	4ppm	£599
Star LS-5 TT	5ppm	£528
Star WinType 4000	4ppm	£299

*2 years on-site warranty

Laser RAM Upgrades

Type	1M	2M	4M	8M
Canon LBP-4+	£139	–	–	–
Canon LBP-4i	£109	–	£279	–
Canon LBP-8 IV	£119	–	£299	–
EPL-4100/4300	£70	£110	£205	–
EPL-5200/5800	£58	£115	£215	–
Fujitsu VM600/VM4	£57	£85	£149	£299
Fujitsu VM800	£115	–	–	–
HP III/IIIP/IIID	£75	£115	£135	–
HP II/IID	£75	£115	£135	–
HP IIISI	£57	£85	£158	£299
HP 4/4M/4P/4MP	£85	£85	£149	£299
HP 4L/4ML	£75	–	–	–
KX-P4410/4430	£129	£199	–	–
KX-P4420/4450i	£75	£115	£135	–
KX-P4400/5400	£89	£139	£229	–
OKI OL400e	£99	£118	–	–
Star LP-8	£138	£225	–	–
Star LS-5	£75	–	–	–

Laser Consumables

Type	Toner	Drum	Dev
Canon/Star 4s	£48	–	–
Canon LBP-8 IV	£70	–	–
Canon LBP-8 III	£52	–	–
EPL-4100/4300	£75	£89	–
EPL-5200	£85	–	–
EPL-7100/7500/8100	£117	–	–
Fujitsu VM600	£85	–	–
Fujitsu VM800	£115	–	–
Fujitsu VM4	£29	£149	£89
HP II/III/IIID	£52	–	–
HP IIP/IIIP	£46	–	–
HP IIISi/4Si	£85	–	–
HP 4/4M/4P/4MP	£72	–	–
HP 4L/4ML	£49	–	–
NEC 610	£85	–	–
NEC S80/S62P	£105	–	–
OKI OL-400/800	£19	£189	–
OKI OL-400e	£17	£129	–
KX-P4410/30	£29	£80	£90
KX-P4440	£32	£108	£115
KX-P4420	£24	£60	£55
KX-P4450/50I/51/55	£18	£75	£60
KX-P4400/5400	£32	£69	–
Qume Crystalprint	£99	£189	–
Star LS-5	£83	–	–

Laser Accessories

Item	Price
JetPage Postscript Cartridge - IIP/IIIP	£225
Postscript Upgrade for LaserJet 4	£270
LaserJet 4 Lower Paper Cassette	£205
LaserJet 4 JetDirect Ethernet Card	£339
LaserJet IIIP Lower Paper Cassette	£115
Ozone filter for KX-P4420	£9
Ozone filter for KX-P4450/4455	£20
LaserJet 4Si Duplex Unit	£475
Envelope Feeder for LaserJet 4	£199
LaserJet Font Cartridges	from £45
LaserJet III FX/IBM Emulation Cart.	£79
Lower Paper Tray for Canon LBP-4	£98
A5 Paper Feeder for LaserJet 4P	£85
Postscript Upgrade for LaserJet 4P	£225

9pin Matrix Printers

Printer	Width	Price
Citizen Swift 90	80col	£114
Citizen Swift 90C	80col	£121
Citizen 120D+ Parallel	80col	£90
Citizen 120D+ Serial	80col	£102
Epson LX100	80col	£109
Epson LX300	80col	£90
Epson LX400	80col	£89
Epson LX1050	132col	£172
Epson FX870	80col	£222
Epson FX1170	132col	£282
Epson DFX5000C	132col	£1095
Pansonic KX-P1150	80col	£89
Panasonic KX-P1695	132col	£270
Star LC15	132col	£177
Star LC100C	80col	£89
Star ZA200	80col	£255
Star ZA250	132col	£315

24pin Matrix Printers

Printer	Width	Price
Citizen ABC Mono	80col	£109
Citizen ABC Colour	80col	£126
Citizen Swift 200 Mono	80col	£138
Citizen Swift 200 Colour	80col	£146
Citizen Swift 240 Mono	80col	£160
Citizen Swift 240 Colour	80col	£178
Citizen Swift 24X	132col	£235
Epson LQ100	80col	£98
Epson LQ150 Colour	80col	£154
Epson LQ570+	80col	£185
Epson LQ870	80col	£353
Epson LQ1070	132col	£283
Epson LQ1170+	132col	£402
Epson LQ2550+	132col	£678
Epson DLQ3000		£672
NEC P20	80col	£110
NEC P30	132col	£236
NEC P32Q	132col	£238
NEC P62Q	80col	£315
NEC P72	132col	£377
NEC P90	132col	£549
Panasonic KX-P2023	80col	£109
Panasonic KX-P2123C	80col	£152
Panasonic KX-P2124	80col	£206
Panasonic KX-P1624	132col	£210
Panasonic KX-P2624	132col	£253
Panasonic KX-P2135	80col	£122
Star LC24-20 II	80col	£113
Star LC24-15 II	132col	£235
Star LC24-30C	80col	£148
Star LC24-100	80col	£95
Star LC24-300C	80col	£178
Star XB24-200C	80col	£315
Star XB24-250C	132col	£385

Ribbons/Ink Cartridges

(Manufacturers Original Ribbons Only)

Type	Black	Colour
Canon BJ10ex/BJ10sx	£14	–
Canon BJ200/BJ230	£16	–
Canon BJ300/BJ330	£11	–
Canon BJC600	£6	£7
Canon BJC800	£16	£22
Citizen 120D+	£4	–
Citizen Swift 200/240	£4	£13
Citizen Swift 24X	£8	£18
Epson LX400/LX850/FX870	£4	–
Epson LX100	£4	–
Epson LX1050/FX1170	£5	–
Epson LQ100	£4	–
Epson LQ150	£4	£12
Epson LQ570/870	£5	–
Epson LQ1070/1170	£8	–
Epson LQ2550	£8	£16
Epson SQ870/SQ1170	£21	–
Epson Stylus Colour	£–	£29
Epson Stylus 300	£12	–
Epson Stylus 800/1000	£10	–
Fujitsu DL1150/DL1250	£5	£7
Fujitsu DL3600	£6	£12
Fujitsu B100/B200	£14	–
HP DeskJet Std Capacity	£–	£21
HP DeskJet High Capacity	£20	–
HP DeskJet 310	£15	£21
HP DeskJet 1200	£20	£21
HP PaintJet	£16	£18
HP PaintJet XL300	£16	£18
Kaga/Taxan KP810/815	£5	–
NEC P88Q/P32Q	£8	–
NEC P82/72/90	£8	£14
Panasonic 1150/1170/1180	£7	–
Panasonic 2180/2123/2124	£7	£15
Panasonic 1824/2824	£8	–
Star LC10/LC20/LC100	£5	£9
Star LC100/200	£5	£11
Star LC24-20/24-100/24-200	£5	£12
Star LC24-30	£8	£12
Star XB24/ZA200/ZA250	£5	£12
Star SJ48	£15	–
Star SJ144 Thermal	£18	£18

Inkjet Printers

Printer	Width	Price
Canon BJ10sx	80col	£137
Canon BJ200	80col	£178
Canon BJ230	132col	£237
Canon BJ300	80col	£319
Canon BJ330	132col	£368
Canon BJC600	80col	£330
Canon BJC800	132col	£1069
Canon BJC820 (Mac)	132col	£1228
Canon BJC4000		£379
Citizen ProJet II	80col	£299
Epson Stylus 300	80col	£138
Epson Stylus 400	80col	£133
Epson Stylus 800+	80col	£172
Epson Stylus 1000	132col	£339
Epson Stylus Colour	80col	£399
Epson SQ870	80col	£415
Epson SQ1170	132col	£580
Fujitsu B100	80col	£145
HP DeskJet 520	80col	£199
HP DeskJet 500C	80col	£215
HP DeskJet 560C	80col	£339
HP DeskJet 310	80col	£165
HP DeskJet 310 & CSF	80col	£204
HP DeskJet 1200C	80col	£949
HP DeskJet 1200C PS	80col	£1299
HP PaintJet XL300+	132col	£1616
HP PaintJet XL300 PS	132col	£2575
HP DeskWriter 520 (Mac)	80col	£189
HP DeskWriter 500C (Mac)	80col	£260
HP DeskWriter 580C (Mac)	80col	£375
Star SJ48	80col	£182
Star SJ144	80col	£285

Sheet Feeders

Item	Price
Canon BJ10ex/BJ10sx	£40
Canon BJ300	£88
Canon BJ330	£92
Citizen Swift 24/200/240	£75
Epson LX400	£69
Epson LQ570/LQ870	£47
Epson LQ1070/LQ1170	£89
HP DeskJet 310	£48
NEC P20/P220	£59
NEC P3Q/P32Q	£85
Panasonic 1170/1180/1123	£59
Panasonic 1124/1124i/2124	£79
Panasonic 1824/2824	£128
Star LC100	£69
Star LC24-20	£69
Star LC200/LC24-200	£69

INKJET REFILL PACKS

Item	Price
Canon BJ10ex/BJ10sx - 2 pack	£12
Canon BJ10ex/BJ10sx - 5 pack	£24
Canon BJ10ex - Cart/3 Refills	£29
Canon BJ200 - Cart/3 Refills	£34
HP DeskJet Std Capacity - 2 pack	£8
HP DeskJet Hi-Capacity - 2 pack	£24
HP DeskJet Std Capacity - 5 pack	£14
HP DeskJet Hi-Capacity - 5 pack	£35
HP DeskJet Colour - Cart/4 Refills	£49

Accessories

Item	Price
Citizen Swift 200/240/ABC Colour Kit	£32
Citizen Projet II Cartridge	£3
Canon BJ10sx Battery Pack	£32
Epson 0K Serial Interface	£29
Epson 8K Serial Interface	£75
Epson 32K Serial Interface	£95
Epson LQ100 Tractor Unit	£29
HP DeskJet FX Emulation Cartridge	£49
HP DeskJet IBM Emulation Cartridge	£57
HP DeskJet 256K RAM Cartridge	£45
HP Deskjet 310 Black Cartridge	£14
HP DeskJet 310 Battery Pack	£33
HP DeskJet Carry Case	£49
HP DeskJet 310 Colour Kit	£28
HP DeskJet 1200 Postscript Upgrade	£499
HP DeskJet Prestige Elite Fonts	£55
HP DeskJet Letter Gothic Fonts	£56
HP DeskJet 310 Parallel Cable	£12
Panasonic Serial Interface	£49
Panasonic 32K Buffer	£16
Panasonic 2180/2123 Colour Kit	£30
Star 8K Serial Interface - LC range	£52
Star 8K Serial Interface - XB range	£39
Star 32K Buffer - LC24/XB24	£52
Dustcovers for 80col printers	£6
Dustcovers for 132col printers	£9
51636G - 50 x DJ500 Transparencies	£35
51838J - 50 x DJ500 Glossy A4 Paper	£35
51630Z - 50 x DJ500 A4 Paper	£15
Appletalk Printer Cable - 2m	£12
Appletalk Interface for DeskJet 1200	£129
Appletalk Interface for LaserJet III	£189

HP On-site Warranty

Item	Price
Mono DeskJets & Deskwriters	£40
Colour DeskJets & Deskwriters	£85
4ppm LaserJets & DeskJet 1200C	£100
8ppm LaserJets	£185

LUTON SHOWROOM
Finway, Dallow Road, Luton, Beds.
Tel: 0582 74 55 55

WATFORD SHOWROOM
250 Lower High Street, Watford, Herts.
Tel: 0923 23 77 74

Manual Printer Sharers

Standard Low Cost Sharers

Connects	Serial	Parallel
2 to 1	£8	£9
3 to 1	£11	£12
4 to 1	£15	£16
5 to 1	£27	£28

Professional Sharers

Connects	Serial	Parallel
2 to 1	£12	£13
3 to 1	£15	£17
4 to 1	£24	£26
5 to 1	–	£38

Crossover Sharers

Connects	Serial	Parallel
2 in/2 out	£28	£29
4 in/2 out	–	£49

Auto Printer Sharers

Uni-Directional

Connects	Serial	Parallel
2 to 1	£27	£29
4 to 1	£44	£45
8 to 1	£62	£75

Bi-Directional

Connects	Serial	Parallel
2 to 1	£29	£29
4 to 1	–	£35

256K RAM module for above £59

256K Auto Sharers

Parallel Auto sharers with 256K RAM

- 2 in/2 out £99
- 4 in/2 out £115
- 8 in/1 out £149

Compact Converter

Item	Price
Serial/Parallel Converter	£32
Serial/Parallel Converter – 256K Buffer	£40
IEEE-488/Centronics Converter	£49

Buffers

	256K	1Mb	2Mb
Flash Buffer	£65	£98	£119
Fast Flash Buffer	£85	£125	£158
Plotter Buffer	£155	£184	£330

Printer Leads

	2m	5m	10m
PC Parallel	£4	£8	£13
25 'D' Male/Male	£4	£8	£13
25 'D' Male/Female	£5	£9	£14
Centronics D/Ended	£8	£10	£15
BBC Parallel	£6	–	–

Other standard cables available on request

Paper

Item	Price
500sht A4 80g Laser/Copier paper	£2.50
500sht A4 80g Coloured paper	£3.50

Pink, Green, Gold, Daffodil, Blue, Vellum

Item	Price
1000sht 9.5" x 11" Fanfold paper	£5.50
2000sht 9.5" x 11" Fanfold paper	£8
1000sht 15" x 11" Fanfold paper	£7.50
2000sht 15" x 11" Fanfold paper	£11
1000sht A4 70g Fanfold paper	£8
2000sht A4 70g Fanfold paper	£15

High Quality Paper

500 sheets A4 90gm pure white ideal for laser & inkjet printers
£4.50

Labels

On continuous fanfold sheets

Item	Price
1000 90mm x 38mm Single Row	£4.50
1000 90mm x 36mm Twin Row	£4.80
1000 90mm x 49mm Twin Row	£4.95
1000 102mm x 36mm Twin Row	£4.70
2400 70mm x 37mm Laser Labels	£15.25

Miscellaneous

Item	Price
80 column Perspex printer stand	£12
132 column Perspex printer stand	£18
80 column Professional printer stand	£15
132 column Professional printer stand	£27
Printer trolley	£39
Ergo Chair	£29

TO ORDER CALL OUR SALES HOTLINE 0582 745555
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Access





Microvitec Monitors

- Cub 3000 - 14" Medium Res for Arc £195
- Cub 1440 - 14" Multiscan for Arc £389
- Cub 1450 - 14" Multiscan for Arc £689
- Touchtec 501 for BBC £239
- Touchtec 3000 for Arc £239

Acorn Monitors

- AKF30 14" Med Res RGB £179
- AKF40 14" Med Res RGB £179
- AKF52 14" Multiscan £249
- AKF50 14" Hi Res Multiscan £299
- AKF60 14" SVGA Multiscan £319
- AKF85 17" SVGA Multiscan £989

Multiscan Monitors

- NEC 3FGe £459
- NEC 4FGe £499
- NEC 5FGe £773
- Taxan 787LR £219
- Taxan 789LR £289
- Taxan 795 Trinitron £489
- Taxan Ergovision 580LR £349
- Taxan Ergovision 685+ £619
- Taxan 875+ £729

Cables

Monitor Cables

- BBC to Philips 8833 £3.50
- BBC to Microvitec Cub £3.50
- BBC to SCART lead £7.50
- BBC to Phono lead £2.50
- BBC to UHF TV lead £2.50
- Arc to Philips 8833 Mk2 £7.50
- Arc to SCART Stereo lead £9.50
- A3010 to Philips Mk2 £7.50
- A3010 to SCART Stereo lead £9.50
- Arc to VGA Monitor adaptor £9.00
- 15pin to 15pin VGA lead £12.00
- 15pin VGA Extension lead £12.00

Disc Drive Cables

- Single Disc Drive Data lead £4
- Dual Disc Drive Data lead £6
- Single Disc Drive PSU lead £3
- Dual Disc Drive PSU lead £4
- Data Duck - connect 2 drives £14
- Power Duck - connect 2 drives £8

Disc Storage Units

- M35 - Holds 50 5.25" discs £4.95
- M85 - Holds 100 5.25" discs £6.95
- M25 - Holds 25 3.5" discs £4.95
- M40 - Holds 40 3.5" discs £6.50
- M80 - Holds 80 3.5" discs £6.99
- DLC2 - Holds 10 x 3.5" discs £1.90
- DLC3 - Holds 5 x 5.25" discs £1.60
- DLC4 - Holds 10 x 5.25" discs £2.00

3M Diskettes

- 10 x 5.25" D/S D/D 80T (747) £6
- 10 x 5.25" D/S H/D 1.6Mb £8
- 10 x 3.5" D/S D/D £6
- 10 x 3.5" D/S H/D £10

Disc Albums

- DW1 - Holds 6 x 3.5" discs £2.50
- DW2 - Holds 6 x 5.25" discs £3.00
- DW3 - Holds 20 x 5.25" discs £3.50
- DW4 - Holds 40 discs £4.50

Bargain Corner

We have a limited number of new and refurbished items for sale at bargain prices. As this is a special offer the items have a 30 day warranty only.

- 12" Monochrome Monitors £49
- 14" RGB Colour Monitors £109
- Dot-matrix Printers from £69
- Master 512 co-processor £49
- Master 65C102 co-processor £39

Please ring or call in for availability of items.

BBC Books

- Advanced BBC User Guide £5
- Master Reference Manual Part 1 £14
- Master Reference Manual Part 2 £14
- Master Advanced Reference Manual £5
- Complete BBC User Handbook £10

Concept Keyboards

- 2010 Universal Concept Keyboard £107
- BBC User Port Cable £12
- Arc Serial Port Cable £12
- PC Serial Port Cable £12
- CK Designer software for Archi £20

BBC Master 128

We have a limited number of the original BBC Master 128 computers available at a special price.

£309

30Mb Winchester

We have a limited number of brand new 30Mb hard drives suitable for the BBC Master or BBC B/B+ with ADFS fitted.

£159

Aries IEEE Interface

An IEEE 488 parallel interface for the BBC Micro. Complete with cables and software.

£99

BBC Software

- Logotron Logo (ROM) £43
- Numerator (ROM) £39
- Pendown (ROM) £32
- View 3.0 (ROM) £45
- ViewSheet (ROM) £36
- ViewStore (ROM) £36
- ViewSpell (ROM/80T Disc) £28
- InterWord (ROM) £29
- InterSheet (ROM) £37
- InterChart (ROM) £25
- InterBase (ROM) £45
- Mega3 - Word/Chart/Sheet £69
- SpellMaster (ROM) £39
- WordAid (ROM) £20
- View Printer Driver Generator £12
- View Printer Driver (ROM) £29
- Fun School 3 Under 5s (Disc) £17
- Fun School 3 5-7yrs (Disc) £17
- Fun School 3 Over 7s (Disc) £17
- Quest Paint (ROM/Disc) £15
- ConQuest (ROM) £10
- Quest Fonts (Disc) £5
- Quest integrex 132 Driver £5
- Wapping Editor (ROM/Disc) £29
- Wapping Art (Disc) £5
- Wapping Fonts #1 (40T Disc) £7
- Wapping Fonts #2 (80T Disc) £7
- AMX Super Art (ROM/Disc) £10
- AMX Stop Press (ROM/Disc) £10
- Page Fonts for Stop Press £5
- BASIC 2 (ROM) £15

BBC Add-Ons

- 32K Shadow RAM Card £29
- 32K ROM/RAM Card £29
- 64K ROM/RAM Card £39
- 128K ROM/RAM Card £59
- Sideways ZIF Socket System £15
- 16K Static RAM for ROM/RAM £8
- 16K DRAM for ROM/RAM £10
- Battery Backup for ROM/RAM £3
- Sideways RAM Utilities Disc £5
- AMX Mouse only £15
- Quest Mouse III £15
- Quest Tracerball £20
- Mouse Mat (Red, Green or Blue) £3
- Master Twin ROM Cartridge £8
- Master Quad ROM Cartridge £12
- Data Duck £10
- Power Duck £8

Disc Filing Systems

- Watford 1772 DDFS Kit £29
- Acorn 1772 Single Density DFS £49
- Watford DFS ROM £16
- Acorn ADFS ROM Upgrade £25
- Disc Filling System Manual £5

Archi Spare Parts

- Cased Archimedes keyboard £99
- Replacement Archimedes keyboard £75
- Replacement A3000/A3010 keyboard £29
- A300/A400 Power Supply £55
- A5000 Power Supply £69
- A4000 Power Supply £59
- A3000 Power Supply £49
- 3.5" FDD for A3000/A400 £49
- 3.5" FDD for A3010/A4000/A5000 £59
- VIDC Video Controller £39
- ARM2 CPU £29
- MEMC 1A Memory Controller £25
- IOC I/O Controller £39
- 256K x 4 ZIP DRAM £6
- Fan Filter £2
- Replacement Keyboard Cable £17
- Replacement Mouse Cable £12
- Replacement Logitech Mouse Ball £7
- 1.2v NiCad Battery for A3000/A5000 £4
- AA Batteries for A300/A400 – pair £2
- Function Keystrip Holder £2
- Eject Button for A3000/A3010 FDD £3
- Loudspeaker £2

BBC Spare Parts

- BBC B Power Supply £49
- BBC B Casing £10
- BBC B Keyboard £39
- Master 128 Casing £15
- 4816 200ns DRAM £2
- OS 1.2 ROM £15
- Master 128 Keyboard £62
- Master 128 Power Supply £69
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KEYSTROKE has been on the market now for two years and has hundreds of extremely satisfied users, here are a few of their comments – *"Acorn should have put it in ROM with RISC OS 3!"*, *"It's incredible, I'm never without it on my icon bar"*, *" Thank you for the most useful piece of software since Impression itself!"*, *Archive - "one of those programs you can't live without!"*.
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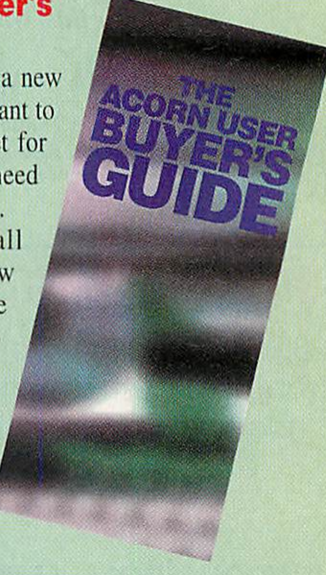
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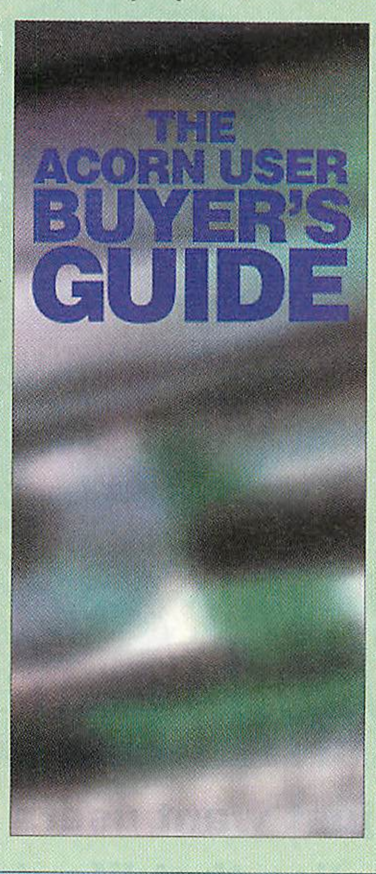
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Knowing the range of Acorn hardware available is vital if you're thinking of buying your first Acorn computer, or you're looking to upgrade your existing machine – and face it, we all want to upgrade at one time or another. *The Buyer's Guide* contains the low-down on every Acorn machine released since 1987 – that includes every Risc-based Acorn computer – and gives the machines' specifications and current prices, second-hand or new. If you know exactly how much you have to spend on an Acorn machine, *The Buyer's Guide* will enable you to pin down the best machine for your budget.

Another important aspect of creating the perfect computer for your needs is buying the right software. *The Buyer's Guide* lists all the main software packages you can buy for Risc OS, along with the suppliers and their contact numbers. So, if you are interested in getting a DTP package, for example, you will be able to narrow the choice down to a handful of packages rather than wasting time trying to scour dealers' adverts for listings of products. Categories include desktop publishing and word processing, databases, spreadsheets, integrated packages, bitmap graphics, photo retouching, vector graphics, multimedia and presentation, communications, music and programming, so if you're thinking of buying any of these software items, check *The Buyer's Guide* first.



The final way to become an expert buyer is to understand the machine properly, so you can go into an Acorn dealer and test software properly, without banging your head against using the machine, rather than the package. Good software is intuitive and follows Acorn's style guidelines closely, so you should be able to get to grips with any package – even complex spreadsheets or databases quickly and easily. *The Buyer's Guide* contains details of standard dialogue boxes, and keyboard shortcuts, so you can make sure the package you think you like will prove to be as functional as you need. Don't settle for second best: if software is badly designed, you will be the one to suffer, so learn to spot unhelpful software by knowing how it *should* work before you buy.

The Acorn User Buyer's Guide is essential reading for both expert and beginner, and could prove the difference between you buying a fantastic Acorn system, or something you'll grow out of quickly. *The Acorn User Buyer's Guide* – don't leave home without it.

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THE MOXON INTERVIEW

RAY CROSS

There is one attitude problem that every single computer fan in the world suffers from, and I mean *every single one*. It's computer bigotry: the 'my computer is better than yours, and I don't care what you say' attitude.

The best cure is knowledge, and visiting Ray Cross, whose company CGS Computerbild is the sole UK distributor for the German company Digital Arts' products – including the photo retoucher *DA's Picture* for the Acorn range – is quite an eye opener.

Did you know that, until recently, over 20 per cent of the DTP market in Germany was catered for by the Atari ST? Yes, the same computer that nine out of ten Acorn owners think is only good for games and music. Yes, the same computer that turns the pointer into a bee when it's busy – busy bee, geddit? Prepare to have your egos bruised, Acorn fans.

'The publishing software available on the Atari platform is three to five years ahead of what's available on the Acorn,' claims Ray.

'It doesn't matter about differences in processors and so on: I simply don't get excited about hardware.

'You need good software to make a platform; look at the NeXT system, which had the greatest hardware but no software and disappeared pretty quickly.'

But what has all this to do with Acorn? If you're an Acorn fan, like me, you're probably reading this and thinking 'I don't want to know about the Atari market: it's irrelevant'. Well, actually, you're wrong.

Digital Arts has a very extensive range of professional publishing and graphical applications available for the Atari range, and now that Atari has pulled the plug on its home computers, DA is looking around for other markets to sell into. Including Acorn. 'We were asked to convert a photo retouching package to the Acorn,' says Ray, 'and that's how the Acorn version of *DA's Picture* came about.

'It's a shame that Acorn punters have this "it's converted from the Atari, so it must be rubbish" attitude, as the programmer, Markus Juergens, has done a fantastic job in optimising the program for speed and usability on low spec machines. As a result, it's the fastest Acorn photo retouching package.'

The attitude Ray's referring to is the criticism of the user interface, which deviates from Acorn's strict guidelines.

The graphical capabilities of the product aren't in doubt, but as for the interface... that's where it's easy to blame Digital Arts' Atari inheritance.

'Look at *Impression* and *ArtWorks* from Computer Concepts: they're not strictly compliant to Acorn's rules.'

'When these products were released, the market was forced to adopt CC's user interface, and it's now the accepted standard.

'If we'd released *DA's Picture* five months earlier people would be comparing the other packages to that, and the attitude would be different.

'The point is that our user interface makes the most effective use of screen space, and was designed for the majority of users who have 14in monitors. Who wants to open up a huge Acorn colour picker window, obscuring the picture you're editing, when all you need is a compact colour picker like ours?'

So are Acorn's guidelines wrong? Or misguided?

'I'm not criticising Acorn,' says Ray. 'I think they've done a great job sewing up their niche markets. I just want users to realise that life *does* exist outside Acorn.'

And boy, does it. Digital Arts has packages for page layout, vector graphics, photo retouching, drivers for scanners and typesetters, colour correction and colour separation... the list is impressive. So can we expect to see lots of professional Acorn products from Digital Arts in the future?

Well, of course, it depends on the sales of *DA's Picture*. Gunter Kreidl, the top man at Digital Arts in Germany, says we should be able to see some new products at Acorn World, but he's keeping his cards close to his chest. Porting is expensive and time consuming, and the end result has to be worth it in terms of sales.

'We're already developing for the Mac and PC platforms,' explains Ray, 'and we're now aiming products at the top end of those platforms. Atari development goes on – but it won't forever – and we'll be making a decision about the Acorn market in October. Then we'll look at other conversions.'

So, the message is clear. The Acorn community needs to appreciate the influence of not only the Mac and PC markets, but also those markets which are about to close down.

There are plenty of companies looking for other platforms to write for, and the Acorn market needs more players of the calibre of Digital Arts.

And if it means having a slightly different user interface to the products, I can live with that, even if it's a conversion from the *Atari*. As long as they leave out the busy bee, though...

Mark Moxon



JULIAN ANDERSON

'I just want users to realise that life *does* exist outside Acorn'

